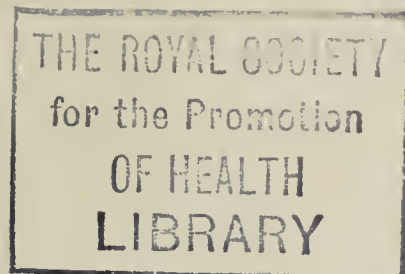


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1966

QUEENSLAND



ANNUAL REPORT

OF THE

HEALTH AND MEDICAL SERVICES

OF THE

STATE OF QUEENSLAND

FOR THE

YEAR 1965-66

PRESENTED TO PARLIAMENT BY COMMAND

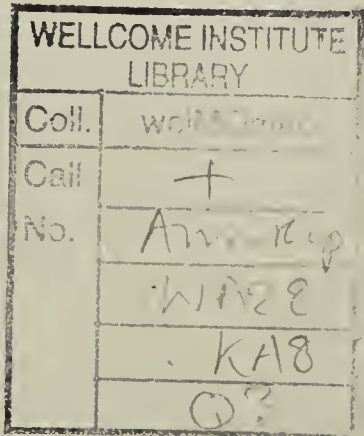
BRISBANE:
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A. 54—1966

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ANNUAL REPORT OF THE DIRECTOR-GENERAL
OF HEALTH AND MEDICAL SERVICES 1965-66

The Honourable the Minister for Health

SIR,—I have the honour to submit for your information the Annual Report of the Health and Medical Services Branch of the Department of Health for the year ended 30th June, 1966.

ABRAHAM FRYBERG,
M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.),
Director-General of Health and Medical Services.

INTRODUCTORY REMARKS

STAFF

Dr. B. J. Phillips, Senior Medical Director, Welfare and Guidance Clinics, was awarded a National Health and Medical Research Council Travelling Fellowship for 1966. He will visit the United States, Great Britain, and Europe where he will study all aspects of child psychiatry.

Dr. B. F. R. Stafford retired on 31st December, 1965, as Director of Psychiatric Services. He joined the Mental Hygiene Service in 1927 as a medical officer and was later Medical Superintendent of the Ipswich Special Hospital and the Brisbane Special Hospital. He was appointed Director of Psychiatric Services in 1940. As Director he was responsible for the implementation of the policy of integration of mental health with the hospital services of the State as a result of which Queensland leads Australia in the treatment of mental illness. He was succeeded by Dr. G. S. Urquhart, Deputy Director of Psychiatric Services.

Mr. W. D. Pryor retired from the position of Chief Sanitary Inspector because of ill-health caused by war service. He joined the Public Service on 23rd April, 1923, as a cadet health inspector. During the war he saw service in Tobruk and other parts of the Middle East and later in New Guinea. He was three times mentioned in despatches. Mr. Pryor was a loyal officer who earned the respect of all associated with him. Under his control and guidance the Section of Environmental Sanitation has maintained a close watch over the standard of environmental health of the State's population, and at the same time he has been responsible for developing a noteworthy reputation for the Section in the manner in which its services are made available to Local Authorities seeking assistance or advice on environmental health problems.

Mr. Alan Gilpin commenced duty as Director of Air Pollution Control in August, 1965.

In December, 1965, the Section of Food and Drugs was divided to create a Section of Food Inspection and a Section of Drugs and Poisons. Mr. W. H. Kelly, formerly Chief Inspector of Food and Drugs, was appointed Chief Inspector of the new Section of Drugs and Poisons, and Mr. C. J. Murray, formerly Senior Inspector of the Food and Drugs Section, was appointed Chief Inspector of the new Section of Foods.

VITAL STATISTICS

The estimated population of Queensland at 31st December, 1965, was 1,615,384, an increase of 20,327 (or 1·3 per cent.). The estimated population living in the metropolitan area was 682,000, an increase of 14,000 (or 2·1 per cent.) during 1965.

Queensland, next to Tasmania, is the most decentralised State in Australia. There is an increase in the proportion of population in the metropolitan area but it will be interesting to see if the development of industry in Central and Northern Queensland will halt this in the future.

The percentage proportion of State population in capital cities of the Commonwealth is shown in the following table:—

State	Percentage Proportion of State Population in Capital Cities
New South Wales	56·04
Victoria	66·14
Queensland	42·03
South Australia	58·30
Western Australia	57·80
Tasmania	33·87
Northern Territory	48·50
Australian Capital Territory ..	96·85
Australia	56·82

The crude birth rate for Queensland decreased from 22·1 to 20·9 per thousand population in the past year and the number of babies born decreased from 34,972 to 33,551. This rate is higher than the Australian average of 19·6 and is higher than all States. It will be seen from Table VI this downward trend is worldwide.

The marriage rate was 8·1 per thousand mean population, an increase of 0·7. Despite this there was a decrease in the number of births by 1,421. This crude birth rate is related to per thousand population, not per thousand women of child-bearing age. In comparing the present rate with that of other years, some adjustment should be made for the increasing number of old people and young children in the population. Table I shows a comparison of the birth rate related to women of child-bearing age (18-39 years). If the crude birth rate in 1954 is taken as 100, in 1965 it was 88. If, however, it is related to women between the ages of 18 and 39, it is 95. The rate is below that of 1954 after making allowance for increase of women in the 18-39 years age group from 201,638 to 226,064. The contraceptive pill has been used widely since 1961.

TABLE I

Year	*Index of Crude Birth Rates	*Index of Births to Number of Women aged 18-39 inclusive
1954	100	100
1955	102	103
1956	99	102
1957	101	106
1958	99	105
1959	103	110
1960	99	108
1961	102	112
1962	98	107
1963	97	106
1964	93	102
1965	88	95

*Base: 1954 = 100

Much has been written about the fall in the number of births and there has been a difference of opinion as to the relation of the contraceptive pill to this. In my opinion it is not the number of births which should be compared but the birth rate, that is, the births per thousand population, particularly the rates of women of child bearing age.

The crude birth rate has fallen from 23·2 in 1962 to 20·9 in 1965. The fall is continuing as is shown by a rate of 20·6 for the first quarter of 1966. It was 24·3 for the first quarter of 1962 and 21·0 for the first quarter of 1965.

TABLE II
BIRTHS ACCORDING TO AGE-GROUP OF MOTHER AND NUMBER OF BIRTHS PER 1,000 WOMEN IN VARIOUS AGE GROUPS—
QUEENSLAND, 1960-1965, INCLUSIVE

Year	Age of Mother					
	15-19	20-24	25-29	30-34	35-39	40-44
1960—						
Number of Births	2,695	11,093	10,064	6,620	3,634	1,007
Female Population	57,952	47,524	44,580	48,072	49,427	46,496
Births per 1,000 Women	46·5	233·4	225·8	137·7	73·5	21·7
1961—						
Number of Births	3,043	11,606	10,240	6,910	3,669	1,087
Female Population	60,036	48,210	44,080	48,179	50,080	47,085
Births per 1,000 Women	50·7	240·7	232·3	143·4	73·3	23·1
1962—						
Number of Births	2,987	11,469	10,061	6,539	3,499	1,048
Female Population	64,329	49,681	44,316	47,242	49,381	47,732
Births per 1,000 Women	46·4	230·9	227·0	138·4	70·9	22·0
1963—						
Number of Births	3,319	11,432	10,187	6,365	3,397	1,162
Female Population	67,965	51,617	44,915	46,399	49,228	48,903
Births per 1,000 Women	48·8	221·5	226·8	137·2	69·0	23·8
1964—						
Number of Births	3,605	11,265	9,735	5,882	3,327	1,050
Female Population	70,280	54,105	46,149	45,300	49,217	49,008
Births per 1,000 Women	51·3	208·2	210·9	129·8	67·6	21·4
1965—						
Number of Births	3,849	11,126	9,270	5,305	2,997	921
Female Population	71,684	57,404	47,169	44,723	48,672	49,701
Births per 1,000 Women	53·7	193·8	196·5	118·6	61·6	18·5
Percentage Increase or Decrease in rates, 1962-65	+15·7	-16·1	-13·4	-14·3	-13·1	-15·9

From Table II it will be seen that since 1962, the first year the effect of the pill was really felt, there was a percentage increase in the birth-rate in the 15-19 years group while a decrease has taken place in all other five year age groups of the child-bearing period.

TABLE III
NUPTIAL BIRTHS PER 100 MARRIAGES OF WOMEN UNDER 35 YEARS OF AGE—QUEENSLAND
FIRST BIRTHS

Duration of Marriage	Year of Birth						Percentage Increase or Decrease 1962-65
	1960	1961	1962	1963	1964	1965	
Under 9 months	27·9	32·0	29·1	30·1	30·8	29·9	+2·7
9-12 months	20·4	19·4	18·3	16·0	14·7	12·4	-32·2
1-2 years	27·6	27·5	27·1	26·0	24·4	23·6	-12·9
2-3 years	10·2	11·3	10·4	10·3	11·6	11·9	+14·4
3-4 years	5·8	6·1	5·6	6·0	5·9	6·3	+12·5
4-5 years	3·9	3·8	3·3	3·6	3·6	3·9	+18·2
5 years and over	8·5	9·3	8·9	8·5	8·8	8·3	-6·7

OTHER THAN FIRST BIRTHS

Duration of Marriage	1960	1961	1962	1963	1964	1965	Percentage Increase or Decrease 1962-65
Under 1 year	0·4	0·5	0·4	0·4	0·4	0·3	-25·0
1-2 years	11·2	11·5	12·1	11·3	11·0	9·5	-21·5
2-3 years	28·2	29·9	29·0	28·9	26·0	23·3	-19·7
3-4 years	29·6	28·4	29·9	30·1	29·0	25·1	-16·1
4-5 years	28·2	27·7	26·8	26·4	24·6	23·5	-12·3
5 years and over	16·0	16·6	15·9	15·6	14·3	13·0	-18·2

From Table III it will be seen the number of nuptial first births per 100 marriages of women under 35 years of age born in the first nine months of marriage increased since 1962 by 2·7 per cent.; there was a percentage decrease for the balance of the first year and in the second year of marriage of 32·2 per cent. and 12·9 per cent. respectively; an increase is seen for the third, fourth, and fifth years of marriage of 14·4 per cent., 12·5 per cent., and 18·2 per

cent.; and again a decrease is seen after five years of marriage of 6·7 per cent. It is important to note that births other than first births per hundred marriages all showed a decrease since 1962.

It would be expected that the involuntary births in the 15-19 years age group and the births in the first nine months of marriage would remain high even if the

contraceptive pill was the main factor in the fall of the birth rate. Table III would indicate that a proportion of parents who in earlier years would have started their families in the first or second year of marriage have postponed them to the third year or later.

A newspaper report attributed to Professor Karmel stated the size of families has decreased from 2.84 in 1961 to 2.58 in 1964.

It will be seen from the above the 1965 birth rate continued to show the same trends as were commented on in my last report. The sharp fall noted there continued, and there were also falls in the specific rates for mothers of different ages—greater for some age groups than others. As was pointed out, it was not clear whether the decreases represented a fall in fertility or a change in the spacing of children due to more objective family planning. It seems most likely that the fall in the rates was related to the wide-spread introduction of new contraceptive pills. Although statistics can never prove causation in such cases and the coincidence in time may be purely accidental, it is my opinion that it is a most important factor in the fall of the birth rate.

In the calendar year of 1965 there were 3,202 illegitimate births which were 9.54 per cent. of all births. 1,172 or 36.60 per cent. of all ex-nuptial births were to mothers under 20 years of age as compared with 34.16 per cent. in 1964.

3,388 first nuptial babies were born to couples married less than nine months. This is 33.19 per cent. of all first nuptial births or 10.10 per cent, of all births.

Of 2,209 first nuptial confinements of mothers under 20 years, 1,712 or 77.50 per cent. children were born within the first nine months of married life.

Of the 3,381 first births to mothers under 20 years of age, approximately 85.3 per cent. would have been ex-nuptial or born within the first nine months of marriage.

TABLE IV

SHOWING THE NUMBER OF EX-NUPTIAL BIRTHS AND RATE PER THOUSAND UNMARRIED FEMALES—1960-65

Year	Under 16 Years		16 and 17 Years		18 and 19 Years	
	Number	Rate	Number	Rate	Number	Rate
1960	44	1.66	180	7.53	319	18.23
1961	54	1.92	246	9.92	386	21.09
1962	62	2.09	225	8.82	400	20.51
1963	57	1.98	304	11.05	470	21.36
1964	84	2.89	362	12.48	544	24.07
1965	107	3.61	431	15.34	634	26.42

I would again invite attention to—

- (1) The increase in the ex-nuptial birth rate in the under 20 years age group.
- (2) The increase is seen in girls aged under 16, 16-17, and 18-19 years.

The infant mortality rate decreased from 19.2 (673) per thousand live births in 1964 to 17.8 (598) the lowest ever recorded in the State, a decrease of 75. The rates for the metropolitan area fell from 17.0 to 14.9, from 18.6 to 18.5 in the other sub-tropical areas, and from 23.6 to 21.4 in the tropical area.

There was a decrease in the number of deaths from immaturity and congenital malformation—the cause of most deaths peculiar to early infancy—from 133 to 101 and 141 to 123 respectively. It is interesting to note that of the 101 deaths from immaturity, 100 died within the first month of life; of the 123 deaths from congenital malformation 74 died during this period. Little can be done for most malformation while if the birthweight is below 2 lb. 12 oz. the baby does not usually survive.

The rates for immaturity in the three divisions were 2.04 (2.5), 3.62 (4.0), and 3.55 (5.1) respectively; for congenital malformations 4.08 (5.1), 3.03 (2.9), and 3.91 (3.9).

A survey was carried out during the year to ascertain the reasons why the metropolitan infant mortality rate was lower than that of the other sub-tropical and tropical areas but the result is not yet available.

The maternal mortality rate increased from 0.29 per thousand live births in 1964 to 0.30. There were ten maternal deaths during each year but the rate is higher due to a decrease in the number of births.

In an examination of the factors which were responsible for the ten maternal deaths in 1964, avoidable factors were established in five cases. This does not mean that the death could or should have been averted. These avoidable factors

were determined long after the event; it is easy to be wise then. But it does mean that if the particular avoidable factor in the death could have been averted the outcome might have been different.

The number of deaths from complications of pregnancy, childbirth, and the puerperium, and the appropriate maternal mortality rates for each State and Territory of Australia in 1965 are seen in the following table:—

TABLE V
MATERNAL MORTALITY, 1965

State or Territory	No. of Deaths	Rate
New South Wales	25	0.32
Victoria	23	0.36
Queensland	10	0.30
South Australia	7	0.34
Western Australia	3	0.19
Tasmania	3	0.40
Northern Territory	2	2.19
Australian Capital Territory	1	0.46
Australia	74	0.33

Heart disease again heads the list of causes of death, being responsible for 4,831 (34 per cent. of total deaths) as against 4,656 (32 per cent.) in 1964. It is a condition of middle and old age and, with an increased span of life, is only to be expected.

Cancer was the second leading cause of death and the high incidence is to be expected as it also occurs in middle and old age. Of the total of 2,073 deaths, 318 died from cancer of the lung (280 males, 38 females). This is a decrease of 3 males and an increase of 8 females as compared with 1964 (283 males and 30 females). There were 59 deaths from cancer of the cervix and 171 deaths from cancer of the breast.

It should be remembered that some cancers are preventable. It has been accepted by the medical profession that most of the cases of cancer of the lung would be prevented if people who feel they must smoke used a pipe or cigars in preference to cigarettes. Despite intensive campaigns by the Queensland Health Education Council the number of cigarette smokers shows no signs of decreasing.

The campaign against cancer of the cervix has met with some success. The establishment of units to detect early signs of cervical cancer with subsequent early treatment has met with a ready response from the public and the incidence of this condition in the future should be lowered.

The number of deaths from motor vehicle traffic accidents (467) shows an increase of 6 compared to the previous year. It is interesting to note the increased use of seat belts and it is hoped that these will be a compulsory installation in all cars during the coming year. The report of the research team should be available later in the year and it is to be hoped that recommendations made as a result of their studies will be implemented.

SECTION OF EPIDEMIOLOGY

The total number of notifications received (2,648) showed a decrease by 365 as compared with the previous year (3,013). The diseases mainly responsible for this were infectious hepatitis (246) and tuberculosis (284). There is little that can be done beyond health education and inspections of food premises to prevent infectious hepatitis so irregular fluctuations in incidence will occur.

The fall in the number of notifications of tuberculosis is the result of the compulsory chest X-ray campaign. This has resulted in discovery of cases early and making them non-infectious at a stage before they have spread their infection widely; it has enabled treatment with modern drugs to be given early, resulting in a lowered mortality rate. It is difficult to understand despite publicity why some people still refuse to attend the mobile clinic when it is in their area.

There were no notifications of diphtheria, 1 proven case of poliomyelitis—the first in three years—and 18 of tetanus, a fall of 7 over the previous year. The patient suffering from poliomyelitis had not been immunized while those from tetanus had not been immunized or had not been fully immunized. These diseases are preventable and parents accept a grave responsibility in not using the facilities available to protect themselves and their children against infection. It is pleasing to see the increasing number of Local Authorities who are making a smallpox vaccination available.

SECTION OF ENTHETIC DISEASES

The number of notifications for venereal disease received was 1,652 as compared with 1,540 in the previous year. This increase of 112 was mainly due to the increase in the number of notifications of acute and subacute gonorrhoea (105). There was a decrease in the notifications of infective syphilis from 128 to 121.

It is little consolation to know that a similar increase in incidence is taking place throughout the world. Although methods of treatment have improved, preventive measures have failed. Every endeavour is made to trace the source of contact but this is often unknown as it is usually the result of a casual acquaintance. Objective signs of infection are easily seen in the male who immediately gets treatment but by the time the female is aware she has been infected she has infected two or three men.

There is little chance of controlling the disease until better methods of discovering sources of infection are found. Health education and endeavours to lessen promiscuity have failed.

The sharp increase in venereal diseases in the 15-19 years age group which was noted last year has not continued and the number of notifications received, (372), compared with those of 1963-64 (382) and 1962-63 (398). There has however, been a sharp increase in the 20-24 years age group.

SECTION OF ENVIRONMENTAL SANITATION

Although Queensland has a high standard of sanitation much remains to be done. The pan system of nightsoil collection is still practised in many centres throughout the State but it must be appreciated that it would be uneconomical to employ any other methods in some towns. A survey was carried out to determine the degree of pollution caused as the result of the discharge of sewage into the Brisbane River at Luggage Point. No evidence was found to show it was polluting bayside beaches.

Fluoridation of water supplies has commenced or been approved in the Local Authority areas of Dalby, Townsville, Biloela, Mareeba, Gold Coast, Proserpine, Allora, and Gungahlin in the past year. Many investigations into the problem of dental caries and its prevention have been carried out in countries overseas and it has been generally accepted that fluorine added to public water supplies in recommended amounts, usually one part per million in temperate climates, resulted in a lower incidence of this condition. Local Authorities which are fluoridating their water supply are to be commended for this. Others are desirous of so doing but have been prevented because approval was not given for its introduction at a poll. This is inevitable when some misguided individual introduces the element of fear into the controversy. Results will speak for themselves and the beneficial effects of fluoridation of water supplies in the Local Authority areas where it has been introduced will influence parents to demand its introduction throughout Queensland.

DIVISION OF AIR POLLUTION CONTROL

The development of air pollution control has been limited by staff and accommodation. The Director, since his arrival, has been fully occupied learning the problems of industry in Queensland, drafting regulations under "*The Clean Air Act of 1963*," and acting in a consultative capacity to industry in the State.

It must be appreciated that air pollution is difficult to control. As a science the means of control is still in its infancy. While the basis of control must depend on legislation, it must be appreciated that success must depend on co-operation, industrial education, and the development of mechanical devices for controlling the waste products of industry. It must be understood that this cannot be done overnight. Industry has co-operated with the Department and will continue to do so if for no other reason it is uneconomical to discharge wastes into the atmosphere.

DIVISION OF TUBERCULOSIS

It is the unknown case which is mainly responsible for the spread of tuberculosis and compulsory mass X-ray is the best procedure to discover these. Two persons, when threatened with prosecution, were X-rayed and found to be suffering from active tuberculosis. In one instance the man concerned was found to have infected one of his family. The early discovery of the unknown case not only allows early treatment to be given but prevents spread to unsuspecting members of the public. It is difficult to understand the objections of the few misguided members of the community who would rather be prosecuted than carry out the requirements of the law.

It is interesting to note that the incidence of tuberculosis in the group who failed to attend until given a reminder was 2.8 per 1,000 films taken as against 0.5 per 1,000 who attended within the specified period.

The number of notifications fell from 891 to 607. This large decrease is a good indication of the value of the continuing compulsory survey which should eventually result in the eradication of a preventable disease in Queensland.

The number of deaths was 42 or a rate of 2.6 per 100,000 population as compared with 75 (4.7) the previous year. This rate is the lowest on record in the State.

DIVISION OF INDUSTRIAL MEDICINE

The work of this Division is another example of the relationship of public health with industry. Its activities relate to problems brought about by conditions of work and their prevention. It concerns itself with environmental hazards and the safety measures associated therewith. The officers of the Division act in an advisory capacity to employer and employee and it is pleasing to know they have the confidence of both sections of industry. The advice given is accepted as unbiased and has resulted in the preservation of industrial peace.

Although there is power in the Health Act to make regulations which would enable the recommendations made to be enforced, it is preferred to have this done by co-operation. Should this fail the necessary action is taken under the powers held by the Department of Labour and Industry.

The division is also concerned with the field of radiologic health. This covers the protection against damaging radiations either from nuclear processes themselves or from the waste products resulting from these processes. Increasing amounts of radioactive isotopes are being used for medical diagnosis and treatment and industry is using them as well as irradiating apparatus in its activities.

DIVISION OF PSYCHIATRIC SERVICES

It is only a matter of ten years or so since mental hospitals were looked upon as institutions for the custodial care of patients who were incapable of caring for themselves in a competitive world. Doctors and nurses were orientated to this policy. The first reform in the approach to mental disease was the transfer of elderly patients to annexes of general hospitals. Their illness was due to mental deterioration of old age but because of shortage of general hospital beds they were forced to be accommodated in a mental hospital.

With advances in modern methods of treatment, particularly the discovery of tranquillising drugs, it was found that the stay in mental hospitals was shortened. As a result, an endeavour was made in this State to treat patients suffering from mental illness in their homes, in day hospitals, or wards in general hospitals.

This policy was adopted in Queensland at a time when other States were accepting subsidy from the Commonwealth Government towards increased inpatient accommodation in mental hospitals. It was decided to use Lowson House for patients whose stay was unlikely to exceed six weeks. It was expanded to include a day hospital and outpatient department. Chermide Neuropsychiatric Hospital of 174 beds was established for patients who were likely to require hospitalisation. It should be fully occupied by the end of this calendar year. Patients requiring a longer stay are still required to go to a special hospital. Transfers are made between all three hospitals but the aim is to try and keep them in the community. This policy has resulted in a decrease in admission rate to the special hospitals and a gradual realisation by the community that mental illness is just another illness which can be treated in a general hospital and to which no stigma is attached. Medical officers in special hospitals do a tour of duty in the general hospitals.

This integrated system has resulted in earlier treatment with a return of the patient to the community in as short a time as possible.

VITAL STATISTICS

Population

The estimated population of Queensland at 31st December, 1965, was 1,615,384, an increase of 20,327 (or 1.3 per cent.) for the year. The estimated population living in the metropolitan area was 682,000, an increase of 14,000 (or 2.1 per cent.) during 1965.

The population density per square mile is 2.42 persons for the whole of Queensland, 1.439 persons in the metropolitan area, and 1.40 persons for the rest of the State; 42.2 per cent. of the population of the State reside in the metropolitan area.

TABLE VI
SHOWING POPULATION OF AUSTRALIAN STATES AND THE PERCENTAGE OF ESTIMATED AUSTRALIAN POPULATION RESIDENT IN EACH STATE DURING CERTAIN YEARS (AT 31ST DECEMBER), SINCE 1935

Year	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania		Australian Capital Territory	Australia
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Number
1935 ..	2,658,672	39.3	1,841,595	27.3	971,297	14.4	586,762	8.4	449,623	6.6	233,623	3.5	14,890	6,755,662
1940 ..	2,790,948	39.4	1,914,918	27.1	1,031,452	14.6	599,056	8.4	474,076	6.7	244,002	3.5	23,134	7,077,586
1945 ..	2,932,998	39.5	2,015,107	27.1	1,084,864	14.6	630,882	8.5	490,088	6.6	250,280	3.4	25,978	7,430,197
1950 ..	3,241,057	39.0	2,237,182	28.1	1,205,418	14.5	722,843	8.7	572,649	6.9	290,333	3.5	37,999	8,307,481
1955 ..	3,526,534	37.9	2,546,332	27.3	1,358,858	14.6	834,661	9.0	668,609	7.2	324,919	3.5	33,960	9,311,825
1960 ..	3,877,261	37.3	2,888,290	27.8	1,502,286	14.5	957,022	9.2	731,033	7.0	355,969	3.4	55,272	10,391,920
1961 ..	3,949,420	37.2	2,950,790	27.8	1,525,278	14.4	980,755	9.2	746,205	7.0	364,134	3.4	62,091	10,603,931
1962 ..	4,016,635	37.2	3,013,447	27.9	1,550,370	14.3	999,693	9.2	765,715	7.1	369,403	3.4	68,824	10,810,371
1963 ..	4,086,293	37.1	3,080,215	27.9	1,571,982	14.3	1,020,174	9.3	784,107	7.1	373,640	3.4	77,578	11,022,811
1964 ..	4,158,926	37.0	3,161,537	28.1	1,595,057	14.2	1,044,662	9.3	799,626	7.1	375,268	3.3	84,686	11,250,708
1965 ..	4,237,514	36.9	3,233,938	28.2	1,615,384	14.1	1,064,629	9.3	820,063	7.1	379,107	3.3	93,815	11,478,703

Births

During 1965, births registered in Queensland totalled 33,551, a decrease of 1,421 on the previous year. The crude birth rate was 20.9 compared with 22.1 in 1964. The births comprised 17,250 males and 16,301 females, giving a masculinity rate of 105.8.

The natural increase (excess of births over deaths) was 19,437, being equal to an increase of 1.2 per cent. of the population.

The birth rate in Queensland remains relatively high, as compared with other States.

TABLE VII
CRUDE BIRTH RATE (PER 1,000 POPULATION)

	1960	1961	1962	1963	1964	1965
Commonwealth of Australia	22.4	22.9	22.1	21.6	20.6	19.6
Queensland	23.6	24.2	23.2	23.0	22.1	20.9
New South Wales	21.4	22.1	21.5	20.8	19.5	18.6
Victoria	22.4	22.6	22.0	21.5	20.8	19.8
South Australia	22.2	23.1	21.6	21.2	20.2	19.8
Western Australia	23.4	23.2	22.6	22.4	21.1	20.1
Tasmania	25.5	25.4	24.8	23.4	22.5	20.4
New Zealand	25.0	25.5	24.7	25.5	24.1	22.8
United Kingdom	17.5	17.8	18.3	18.4	18.7	18.4
United States of America ..	23.6	23.4	22.4	21.5	21.2	19.4
Canada	26.8	26.0	25.5	24.8	23.8	21.4

Deaths

For the year 1965 deaths from all causes totalled 14,114, giving a crude death rate (deaths per 1,000 mean population) of 8.8 compared with 9.2 in the previous year, and higher than the crude death rate of the Commonwealth of Australia. Table VIII compares the crude death rates of Queensland, other States, and certain overseas countries since 1960.

Diseases of the heart, malignant neoplasms and vascular lesions affecting the nervous system were again the greatest cause of death in the population.

There were 2,073 deaths from cancer as compared with 2,149 in 1964. This is about 15 per cent. of all deaths.

TABLE IX
BIRTH, INFANT MORTALITY, MATERNAL MORTALITY, AND REPRODUCTION RATES, QUEENSLAND AND AUSTRALIA

	Crude Birth Rate		Infant Mortality Rate		Maternal Mortality Rate (1)		Gross Reproduction Rate (2)		Net Reproduction Rate (3)	
	Queensland	Australia	Queensland	Australia	Queensland	Australia	Queensland	Australia	Queensland	Australia
1946	24.8	23.7	29.3	29.0	2.26	1.85	1.55	1.46	1.42	1.33
1947	25.6	24.1	30.8	28.5	1.62	1.87	1.64	1.49	1.54	1.36
1948	24.7	23.1	28.0	27.8	1.47	1.40	1.59	1.45	1.51	1.33
1949	24.0	22.9	24.7	25.3	1.44	1.21	1.56	1.46	1.48	1.33
1950	24.4	23.3	24.8	24.5	1.45	1.09	1.60	1.49	1.52	1.42
1951	24.2	23.0	25.7	25.2	1.18	1.05	1.62	1.49	1.54	1.21
1952	24.6	23.3	24.9	23.8	1.03	0.94	1.67	1.55	1.59	1.47
1953	23.9	22.9	25.0	23.3	0.71	0.62	1.65	1.56	1.57	1.48
1954	23.7	22.5	22.3	22.5	0.96	0.69	1.67	1.56	1.62	1.50
1955	24.1	22.6	20.3	22.0	0.62	0.64	1.71	1.59	1.65	1.53
1956	23.5	22.5	22.7	21.7	0.89	0.56	1.72	1.61	1.66	1.55
1957	24.0	22.9	21.6	21.4	0.62	0.63	1.78	1.66	1.72	1.60
1958	23.6	22.6	19.4	20.5	0.47	0.50	1.79	1.67	1.72	1.60
1959	24.3	22.6	20.3	21.5	0.59	0.46	1.87	1.68	1.80	1.61
1960	23.6	22.4	21.0	20.2	0.68	0.53	1.84	1.68	1.77	1.61
1961	24.2	22.9	20.0	19.5	0.76	0.44	1.86	1.73	1.79	1.66
1962	23.2	22.1	21.1	20.4	0.64	0.36	1.79	1.66	1.72	1.60
1963	23.0	21.6	20.1	19.5	0.25	0.27	1.79	1.62	1.72	1.56
1964	22.1	20.6	19.2	19.1	0.29	0.33	1.68	1.53	1.61	1.47
1965	20.9	19.6	17.8	18.5	0.30	..	1.57	1.45	1.51	1.40

(1) *Maternal Mortality Rate*.—Deaths from puerperal causes per 1,000 live births.

(2) *Gross Reproduction Rate*.—Represents the number of female children born on the average to women living right through the child-bearing years if the conditions on which the rate is based continue.

(3) *Net Reproduction Rate*.—Is the gross reproduction rate corrected for deaths of females from birth to the end of the child-bearing period. It is a more accurate index than the gross reproduction rate. Unless it exceeds unity the population is not replacing itself.

In every 100 male deaths, 47 died of a degenerative vascular disease, 15 of cancer and 9 of accident. In every 100 female deaths, the respective figures are 50, 15 and 5. The fatal accident rate was much higher in males than in females.

TABLE VIII
CRUDE DEATH RATE (PER 1,000 POPULATION)

	1960	1961	1962	1963	1964	1965
Commonwealth of Australia	8.6	8.5	8.7	8.7	9.0	8.8
Queensland	8.3	8.4	8.6	8.5	9.2	8.8
New South Wales	9.1	9.0	9.3	9.2	9.6	9.3
Victoria	8.6	8.4	8.6	8.8	8.8	8.7
South Australia	8.3	8.1	8.3	8.1	8.6	8.3
Western Australia	7.9	7.8	7.7	7.7	8.1	7.8
Tasmania	7.7	7.9	8.0	7.7	8.6	8.2
New Zealand	8.8	9.0	8.9	8.8	8.8	8.7
United Kingdom	11.5	12.0	11.9	12.1	11.3	11.5
United States of America ..	9.5	9.3	9.5	9.6	9.4	9.4
Canada	7.8	7.7	7.6	7.8	7.6	7.5

Marriages

Registration of marriages, during the year totalled 12,967 compared with 11,752 in 1964. The marriage rate was 8.1 per 1,000 mean population, compared with 7.4 in the previous year. Marriages of minors during the year totalled 8,134 of whom 2,150 were males and 5,984 females.

Infant Mortality

The infant mortality rate of Queensland and other States and certain overseas countries is shown in Table X, while Table IX is a composite one showing the birth rates, infant mortality and reproduction rates of Queensland compared with the Commonwealth of Australia.

The net reproduction rate is higher than the Australian average, whilst the maternal mortality rate declined from 5.77 in 1911 to 0.30 in 1965.

If the crude death rate had remained at the level prevailing in 1900, over 4,000 additional deaths would have occurred in Queensland during 1965. In addition, the expectation of life has been increased by 17 years during that period.

TABLE X
INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1,000 LIVE BIRTHS)

—	1958	1959	1960	1961	1962	1963	1964	1965
Commonwealth of Australia	20.5	21.5	20.2	19.5	20.4	19.5	19.1	18.5
Queensland	19.4	20.3	21.0	20.0	21.1	20.1	19.2	17.8
New South Wales	21.3	22.7	21.2	20.8	21.4	19.9	20.3	19.1
Victoria	19.2	21.2	18.5	17.8	18.5	18.9	16.9	17.5
South Australia	22.4	20.7	18.9	20.0	19.2	18.7	19.0	18.4
Western Australia	21.5	20.2	21.6	19.7	22.3	20.4	19.7	21.7
Tasmania	19.5	23.4	19.1	16.8	20.7	17.9	20.1	16.6
New Zealand	19.4	19.9	19.7	19.1	16.6	19.6	19.1	19.5
United Kingdom	23.4	23.1	22.4	22.1	22.4	21.7	20.6	21.0
United States of America	27.1	26.4	25.7	25.3	25.3	25.2	*	*
Canada	30.2	28.4	27.3	27.2	27.6	26.3	*	*

* Not available.

The causes of death to residents of Queensland during 1965 are shown in Table XI.

TABLE XI
SHOWING CAUSES OF DEATH OF RESIDENTS OF QUEENSLAND, 1962-1965

Causes of Death	Males	Females	Total 1965	Persons		
				1964	1963	1962
Tuberculosis of Respiratory System	34	6	40	72	77	83
Tuberculosis, other	2	..	2	3	3	1
Diphtheria .. .. .	..	..	..	..	..	..
Whooping Cough .. .. .	..	..	..	1	..	..
Tetanus	5	1	6	11	5	6
Acute Poliomyelitis .. .. .	..	..	..	..	..	5
Measles	1	2	3	5	3	3
Infectious Hepatitis	3	4	7	13	15	11
Other Infectious and Parasitic Diseases	27	13	40	48	59	50
Malignant Neoplasms	1,197	876	2,073	2,149	1,984	1,937
Neoplasms, Benign and Unspecified	13	14	27	29	27	34
Hay Fever and Asthma	54	34	88	89	57	46
Diabetes Mellitus	61	111	172	169	150	134
Other Allergic, Endocrine System, Metabolic, and Nutritional Diseases ..	22	7	29	45	29	28
Pernicious and other Hyperchromic Anæmias	2	5	7	8	11	12
Other Diseases of the Blood and Blood-forming Organs	28	22	50	40	35	35
Mental, Psychoneurotic and Personality Disorders	61	53	114	85	64	60
Vascular Lesions affecting the Central Nervous System	916	1,064	1,980	1,998	1,859	1,746
Other Diseases of the Nervous System and Sense Organs	107	66	173	156	142	178
Diseases of the Heart	2,949	1,882	4,831	4,656	4,346	4,159
Hypertensive Disease	135	147	282	332	289	336
Other Diseases of the Circulatory System	228	200	428	520	473	465
Influenza	10	5	15	79	12	18
Lobar-pneumonia	71	51	122	110	95	87
Broncho-pneumonia	131	97	228	328	209	213
Other and Unspecified Pneumonia	49	44	93	124	134	115
Bronchitis	255	43	298	325	294	259
Other Diseases of Respiratory System	63	52	115	161	107	126
Diseases of Stomach and Duodenum	73	33	106	96	103	97
Appendicitis	10	4	14	14	19	19
Diseases of Liver, Gallbladder, and Pancreas	69	55	124	147	131	140
Other Diseases of Digestive System	89	72	161	172	152	194
Nephritis and Nephrosis	103	91	194	201	184	181
Diseases of Male Genital Organs	59	..	59	69	65	58
Other Diseases of Genito-Urinary System	75	147	222	256	207	208
Deliveries and Complications of Pregnancy, Childbirth, and Puerperium ..	..	10	10	10	9	23
Diseases of the Skin and Cellular Tissue	6	14	20	13	21	21
Diseases of the Bones and Organs of Movement	27	27	54	38	52	44
Congenital Malformations	98	86	184	180	176	167
Intra-cranial and Spinal Injury at Birth	19	20	39	44	44	43
Other Birth Injury	19	10	29	40	45	46
Post-Natal Asphyxia and Atelectasis	38	26	64	57	62	101
Infections of Newborn	13	10	23	18	29	28
Immaturity Unqualified	52	48	100	129	144	131
Other Diseases Peculiar to Early Infancy	41	34	75	91	114	103
Senility without mention of Psychosis	12	41	53	44	86	214
Symptoms Referable to Systems or Organs	2	2	4	11	7	5
Ill-defined and Unknown Causes	31	10	41	29	32	21
Motor Vehicle Traffic Accidents	358	109	467	461	408	408
Accidental Falls	77	101	178	178	113	158
Accidental Drowning and Submersion	63	6	69	74	69	59
Other Accidents	223	52	275	231	213	276
Suicidal and Self-Inflicted Injury	180	121	301	322	289	261
Homicide and Injury Purposely Inflicted by Other Persons	11	14	25	42	22	29
Total from all Causes	8,172	5,942	14,114	14,523	13,275	13,182

Degenerative diseases of the blood vessels accounted for most fatalities from heart disease and for nearly all deaths from vascular diseases of the central nervous system. Together they accounted for more than 48 per cent. of all deaths. Most of these occur in old people and hence are at present largely unavoidable. However, an increasing number of deaths due to ischaemic heart disease are occurring in middle aged males.

Some of these are preventable, because many middle aged men are overweight and are heavy smokers, both of which are known to increase the probability of death. Cancer accounted for 14.7 per cent. of deaths, compared with 15.1 in 1964. Deaths due to traffic accidents, however, have increased from 408 in 1962 and 1963 to 467 in 1965. This is a significant increase—being far in excess of the population increase.

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Chief Sanitary Inspector: W. D. PRYOR

Chief Inspector of Foods: C. J. MURRAY

INSPECTORS IN CHARGE OF DISTRICT OFFICES

Townsville: H. P. LOWES

Toowoomba: W. J. SHIELDS

Mackay: E. J. THOMSON

Cairns: W. T. JOHNSTON

Rockhampton: K. F. KEEFER

Bundaberg: C. V. JAMES

SECTION OF EPIDEMIOLOGY

Tables XVII and XVIII show the reported incidence of notifiable diseases during the fiscal year, while Table XIX shows the incidence of the same diseases for the calendar year 1965. During 1965-66, notifications totalled 2,648 (1,071 in Brisbane and 1,577 in country districts), compared with 3,013 (1,160 and 1,853) the previous year. The decrease of 365 was due mainly to decreased notifications for infective hepatitis and tuberculosis. Notifications of infective hepatitis dropped from 795 cases in 1964-65 to 549 cases, while tuberculosis notifications fell from 891 patients the previous year to 607. Decreases also occurred in the number of notifications for ancylostomiasis (—81), leptospirosis (—39) and rheumatic fever (—20). These decreases were offset by increased notifications received for infantile diarrhoea (+112), bacillary dysentery (+46), Q. Fever (+31), rubella (+65) and scarlet fever (+85).

It is realised that the number of notifications received does not always reflect a true picture as regards incidence of a disease. Special attempts at case finding as in a mass X-ray campaign for tuberculosis, may produce increased notifications. This apparent increase would not be a true indication of the incidence of the disease. Decreased notifications sometimes arise due to lack of enthusiasm on the part of medical practitioners. However it is believed that there has been a definite decrease in infective hepatitis in the community. The reduced number of tuberculosis notifications is no doubt an indication that the mass X-ray campaign has been efficient in detecting cases.

The prevalence of communicable diseases existing in Queensland has been conveyed to medical practitioners each month through the News Bulletin of the Queensland Branch of the Australian Medical Association.

Infantile Diarrhoea

Reference has already been made to the increase of infantile diarrhoea notifications. The incidence was highest in July and August, 1965. Apart from January, 1966, there were relatively few cases during the summer months. This is quite a change to the position fifty to sixty years ago when gastro-enteritis occurred regularly each summer.

The higher incidence in winter suggests a respiratory rather than an oral method of infection and a virus as the causal organism. So far this hypothesis remains unproven both in Queensland and in other States where a similar altered pattern occurred. No laboratory has been successful in isolating an organism despite much searching.

Diphtheria

It is worth reporting that not one case of diphtheria occurred for the first year for which records are available. Notification of the disease commenced in Queensland in 1901. Prior to that year statistics of deaths from the disease are available since 1870, when there were 43 deaths. In 1890 there were 232 deaths from diphtheria. In 1920, there were 3,232 notifications of which 87 were fatal. The incidence of the disease was declining before the introduction of immunization which became widely accepted between 1925 and 1935, but the procedure has certainly been responsible for reducing the disease to its present negligible incidence.

Infective Hepatitis

Although 549 cases of infective hepatitis were notified, the number of cases was far less than in the two previous years, viz., 1,535 in 1963-64 and 795 in 1964-65. The reduction is probably due to a lessening in the number of susceptibles in the community rather than to the success of any public health measure. The disease has been endemic

for a number of years and many people have developed an immunity either by frank disease or latent infection. Control is still difficult as at present the only preventative methods available are the short-lived protection of gamma globulin given to close contacts and good sanitation and personal hygiene.

There is some evidence however, that a vaccine may be available in the future. Rightsel reported the successful cultivation of the causative virus in 1961. The optimism which followed this announcement gradually waned as the work was not substantiated. Hopes have brightened with the isolation by workers at Fairfield Hospital, Melbourne, of a virus from patients suffering from the disease. If this virus proves to be the causal agent, it should be possible to produce sufficient virus to produce a vaccine.

From Table XII it will be seen that the bulk of cases reported came from the age groups five to fifty years, with the highest incidence in the five to fourteen years group. The disease was reported from many areas of the State and occurred in almost the same incidence right throughout the year.

TABLE XII

SHOWING AGE DISTRIBUTION OF 549 NOTIFIED PATIENTS WITH INFECTIVE HEPATITIS NOTIFIED DURING 1965-66

Age Group in Years	Number of Cases	Percentage of Total Cases
0-4	21	3.8
5-14	182	33.2
15-24	126	23.0
25-34	102	18.6
35-49	65	11.8
50 years and over ..	44	8.0
Not stated	9	1.6
Totals	549	100.0

Leptospirosis

Leptospirosis occurs in association with animals and wet soil. Reservoirs of infection include cattle, pigs and rats. In Queensland, the principal occupation in which leptospirosis is a hazard are cane cutters, dairy farmers and meat workers. During 1965-66, the number of cases reported (60) was lower than the previous two years, viz., 81 (1964-65) and 130 (1963-65). In the last three years, the cane industry has been responsible for relatively few cases. This year only 11 cases were reported from the industry. The reduction may be due to the introduction of mechanical harvesting. The meat industry provided 26 cases and the cattle and dairy industries 20 cases. The origin of the disease was unknown in three cases. The cases in females and school children were associated with the dairy and cane industries.

Table XIII (page 8) sets out the statistical divisions in which the cases occurred, the age groups, hospitalisation and sex.

Melioidosis

Four cases of melioidosis were notified. All occurred in natives from the Torres Straits. Three were fatal. Diagnosis was made on the isolation of the causative organism in one case, the histopathology in another and clinically in the remaining two. In three patients there was an underlying diabetic condition. The disease occurs in animals and is regarded as sporadic in man.

The outbreak is being investigated by searching for an animal reservoir and the examination of sera in the human population.

TABLE XIII
SHOWING GEOGRAPHICAL LOCATION ACCORDING TO STATISTICAL DIVISIONS AND AGE GROUPS OF PATIENTS WITH LEPTOSPIROSIS NOTIFIED DURING 1965-66.

Statistical Divisions	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 and over	Un-known	Totals	In Hos-pital	Not in Hos-pital	Males	Fe-males
Metropolitan	1	5	3	1	..	..	..	1	11	6	5	11	..
Moreton	3	1	1	..	1	..	..	1	7	1	6	6	1
Maryborough	4	1	1	..	1	..	..	..	7	7	..	5	2
Downs	1	2	2	1	..	..	..	..	6	3	3	5	1
Roma	1	..	..	..	..	..	..	1	1	..	1	..
South Western
Rockhampton	1	1	..	3	..	..	..	..	5	4	1	5	..
Central Western	1	..	1	..	..	1	..	3	2	1	3	..
Far Western
Mackay	1	4	1	..	..	..	..	..	6	6	..	6	..
Townsville
Cairns	2	4	3	2	1	2	..	..	..	14	9	5	15	..
Peninsula
North Western
Outside Queensland
Totals	2	15	19	10	7	4	..	1	2	60	39	21	56	4

Meningitis
In 1960, all forms of meningitis were made notifiable. Prior to this, the only type to be reported was that due to meningococcus. During 1965-66 the number of cases notified totalled 122.
Table XIV sets out the number of cases due to the various organisms and the distribution in two age groups. Meningococcal and Influenzal Meningitis are predominantly diseases of the lower age groups, aseptic meningitis occurs in both the young and older groups, while pneumococcal meningitis occurs more often in the upper age groups. The Virology Section of the Laboratory of Microbiology and Pathology investigated 47 cases of suspected aseptic meningitis. In only one instance was a casual organism (an enterovirus) isolated.

TABLE XIV
SHOWING THE NUMBER OF VARIOUS TYPES OF MENINGITIS IN TWO MAJOR AGE GROUPS

Type	0-14 years	15 and Over	Total
Meningococcal	13	6	19
Influenzal	27	1	28
Aseptic	18	21	39
Pneumonococcal	3	6	9
Unknown	17	10	27
Totals	78	44	122

Poliomyelitis
Only one confirmed case of poliomyelitis was reported. This occurred in an unimmunized boy from Thursday Island. This is the only confirmed case of this disease occurring in Queensland in the last three years. This satisfactory position may be attributed to the success of Salk vaccination. Since immunization with Salk vaccine began ten years ago in 1956, there has been only one summer (in 1961-62), in which

there has been any real incidence of the disease. This is quite a different picture to the decade prior to 1956, when the disease occurred in heavy incidence with death rate of 9 per cent. and many residual crippling effects in surviving patients.
In May 1966, the National Health and Medical Research Council recommended that a change be made from the inactivated (Salk) poliomyelitis vaccine to the oral attenuated vaccine. In Queensland the change will take place in January 1967. The vaccine produces a local immunity in the gut, thus preventing multiplication of the virus as well as producing protective antibodies in the blood stream. Its oral administration will make it a much less painful procedure for the recipient than the injection by which the inactivated vaccine is given.

Q. Fever
Three industries, viz., Meat, Sheep and Cattle, supplied the bulk of the notifications of 343 cases of Q. Fever. From the meat industry came 177 cases, while the cattle industry (mainly dairying) was responsible for 61 cases and the sheep industry 49 cases. The patients were predominantly male—332 to 11 females. All of the latter as well as any school children notified were dependents of men working in these industries mentioned. One interesting case occurred in a kangaroo shooter. As the three industries are carried on in several parts of the State, notifications came from many districts. This is illustrated in Table XV.

Rubella
Rubella in females over fourteen years of age was made a notifiable disease in Queensland after the discovery, in 1940 that the disease in pregnant women was responsible for such congenital abnormalities as deafness, cataracts, heart defects and mental subnormality in the resultant child.

During 1965-66 notifications of rubella totalled 123. From information regarding pregnancy of 120 patients received from practitioners it was ascertained that six of these were pregnant. A further follow-up of these six patients showed four normal babies and one miscarriage in five women. One patient could not be traced.

TABLE XV
SHOWING DETAILS OF GEOGRAPHICAL LOCATION AND AGE DISTRIBUTION OF 343 CASES OF Q. FEVER NOTIFIED DURING 1965-66

Statistical Divisions	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 and over	Un-known	Totals	In Hos-pital	Not in Hos-pital	Males	Fe-males
Metropolitan	18	26	12	18	10	2	..	1	87	51	36	87	..
Moreton	22	16	8	10	3	1	..	3	63	37	26	61	2
Maryborough	1	3	3	4	10	5	..	1	1	28	14	14	24	4
Downs	7	13	9	8	..	..	..	3	40	20	20	39	1
Roma	1	7	13	4	5	2	..	..	32	20	12	32	..
South Western	1	1	..	1	..	..	..	3	2	1	2	1
Rockhampton	5	8	4	5	9	..	..	..	31	6	25	30	1
Central Western	2	..	7	1	1	..	..	..	11	7	4	11	..
Far Western
Mackay	2	7	6	1	3	1	..	..	20	16	4	20	..
Townsville	1	2	2	3	..	..	..	..	8	4	4	7	1
Cairns	1	4	6	4	1	2	1	..	..	19	9	10	18	1
Peninsula
North Western	1	..	..	..	..	..	..	..	1	1	..	1	..
Outside Queensland
Totals	2	66	89	70	61	39	7	1	8	343	187	156	332	11

Smallpox

The advent of air travel has increased the risk of introduction of smallpox into Australia. Realising this danger, local authorities were urged in 1959 to conduct vaccination campaigns against this disease. The number of local authorities accepting this responsibility is gradually increasing and at the end of June 1966, from a total of 132 local authorities, 85 were active in this regard. The Brisbane City Council commenced vaccination against smallpox in November 1965, but the response so far from the Brisbane public has not been high. The Commonwealth Serum Laboratories advise that since 1959 over 270,000 doses of vaccine have been distributed in Queensland. From these figures and taking into account people who were vaccinated during service with the Armed Forces, it is estimated that approximately 20 per cent. of the Queensland population have had primary vaccination against the disease.

Tetanus

Eighteen cases of tetanus were notified. The incidence of the disease is less now than when immunization against tetanus was commenced as a routine procedure in this State fourteen years ago. The average notifications for five years 1947-52 was 32 per annum. In the last five years the average has been less than twenty notifications per annum.

The reduction has been in the younger age groups. In an analysis of cases in 1945-49 it was found that 63 from a total of 160 cases (or 39 per cent.) came from the 0-14 years age group. During 1965-66 only two cases (11 per cent.) from the 18 cases notified came from this younger age group.

Immunization against tetanus has been effected when children receive triple antigen and this age group is well protected. Apart from those adults who received protection during their service with the Armed Forces, the older age groups are not highly immunized.

The immunization status of the present year's cases was almost negligible. A few had one injection but the majority had no immunization at all. None of the cases had completed the primary immunization course. The younger age groups receive protection against tetanus when they receive triple antigen injections. Apart from those adults who were immunized during their service with the Forces, adults are poorly protected against tetanus.

TABLE XVI
SHOWING THE INCIDENCE IN VARIOUS AGE GROUPS AND DEATHS FROM TETANUS FOR THE TWO PERIODS 1945-49 AND 1965-66

Age Group	1945-49		1965-66	
	Number	Percentage	Number	Percentage
Under 1 year ..	6*	3.75	1	5.6
1 to 14 years ..	63	39.38	2	11.1
15 to 29 years ..	35	21.87	2	11.1
Over 30 years ..	56	35.00	13	72.2
	160	100.00	18	100
Deaths	89	56	7	39

* All neo-natal cases

While the overall fatality rate has lessened, the improvement has been in the lower age groups. The seven deaths which occurred in 1965-66 came from thirteen cases reported from the over 30 years age group (a fatality rate of 58 per cent.).

TABLE XVII
NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY 1965 TO 30TH JUNE, 1966
METROPOLITAN AREA (POPULATION AT 31ST DECEMBER, 1965—682,000)

Disease	Months												Totals 1965-66	Totals 1964-65
	1965						1966							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Ancylostomiasis .. .. .	..	..	2	1	..	..	..	..	..	..	..	..	3	50
Anthrax .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	1	2	..	1	..	..	..	1	3	3	1	1	13	13
Brucellosis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Cholera .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	40	35	18	3	11	6	22	10	6	2	4	8	165	108
Diphtheria .. .. .	..	..	..	..	..	3	1	..	..	..	1	..	5	1
Dysentery (Amoebic) .. ..	..	..	..	..	3	3	6	9	1	4	..	1	30	3
Dysentery (Bacillary) .. ..	..	1	..	2	3	3	6	9	1	4	..	1	30	12
Encephalitis .. .. .	..	..	1	..	2	..	..	2	..	2	1	1	9	5
Filariasis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Hepatitis (Infective)	5	12	28	21	24	21	26	19	30	13	13	29	241	312
Hydatid Disease .. .. .	..	..	..	..	1	..	1	..	..	..	..	..	2	1
Lead Poisoning .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Leprosy .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Leptospirosis	1	2	1	..	1	..	..	..	..	..	..	..	..	1
Malaria .. .. .	..	..	1	..	1	..	1	2	1	3	2	1	12	13
Melioidosis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	14
Meningitis	4	5	2	3	2	6	9	6	12	4	2	5	60	54
Neo-Natal Infections .. ..	..	..	..	1	..	..	..	..	..	..	..	..	1	..
Ornithosis (Psittacosis) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Infections .. ..	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Q. Fever	2	7	13	3	7	3	11	6	4	4	3	24	87	66
Relapsing Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	2	8	1	6	2	5	8	2	13	3	5	4	59	53
Rubella .. .. .	..	6	12	14	10	7	6	..	4	2	2	..	63	32
Scarlet Fever	13	15	13	5	4	5	3	1	5	1	10	10	85	45
Smallpox .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis .. .. .	..	..	..	..	..	..	..	..	..	1	..	..	1	2
Tetanus .. .. .	..	..	..	1	..	..	1	..	2	1	..	2	7	5
Tuberculosis	13	19	17	26	32	20	22	7	14	14	13	17	214	360
Typhoid Fever (including Paratyphoid) ..	..	..	..	..	..	..	..	..	1	..	..	..	1	3
Typhus Fever—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine .. .. .	..	..	..	..	..	..	..	..	..	..	..	1	1	..
Scrub .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tick .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yellow Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	81	112	109	87	100	79	118	65	96	59	58	107	1,071	1,160

TABLE XVIII

NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1965 TO 30TH JUNE, 1966
EXTRA METROPOLITAN AREA (POPULATION AT 31ST DECEMBER, 1965—933,384)

Disease	Months												Totals 1965-66	Totals 1964-65
	1965						1966							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Ancylostomiasis	2	2	3	1	1	..	2	..	..	..	2	..	13	47
Anthrax .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	2	2	1	..	1	..	2	1	..	..	..	..	9	8
Brucellosis .. .. .	..	..	..	..	..	..	1	2	2	1	..	2	8	11
Cholera .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	27	22	15	19	13	6	10	10	10	3	1	1	137	82
Diphtheria .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Dysentery (Amoebic) .. .. .	..	2	..	1	1	..	..	..	1	..	..	..	5	13
Dysentery (Bacillary)	2	..	6	1	2	3	5	1	20	6	4	2	52	24
Encephalitis	2	1	..	..	1	..	2	2	..	1	1	..	10	5
Filariasis .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Infective)	20	23	21	33	19	12	20	32	27	34	39	28	308	483
Hydatid Disease .. .. .	..	..	..	1	..	..	..	..	1	..	..	..	2	..
Lead Poisoning .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Leprosy .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	5
Leptospirosis	5	10	3	3	1	1	1	5	6	4	4	6	49	86
Malaria	1	1	3	3	1	..	..	1	..	1	3	5	19	25
Melioidosis .. .. .	..	..	..	..	..	..	..	..	..	..	4	..	4	..
Meningitis	7	5	4	3	5	4	9	5	9	2	4	5	62	68
Neo-Natal Infections	3	1	1	..	..	1	..	..	2	..	..	1	9	3
Ornithosis (Psittacosis) .. .. .	..	..	..	..	..	..	..	..	1	..	..	..	1	2
Plague .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic) .. .. .	..	1	..	..	..	..	..	..	1	..	..	..	2	8
Puerperal Infections	1	1	1	2	2	..	4	2	1	..	..	4	18	32
Q. Fever	7	16	19	22	24	14	34	16	15	12	10	67	256	246
Relapsing Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	4	5	5	7	1	3	2	7	2	3	2	3	44	70
Rubella .. .. .	..	5	11	16	13	7	7	..	..	..	..	1	60	26
Scarlet Fever	11	17	9	10	6	5	11	3	5	4	1	10	92	47
Smallpox .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis .. .. .	..	..	1	..	2	2	1	1	..	..	1	..	8	1
Tetanus	1	1	1	1	..	2	1	..	1	1	1	1	11	20
Tuberculosis	20	37	36	32	16	34	34	38	32	37	36	41	393	531
Typhoid Fever (including Paratyphoid) .. .. .	..	..	..	..	..	..	..	2	1	..	..	..	3	1
Typhus Fever—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Scrub .. .. .	..	..	..	..	..	..	..	..	..	..	1	..	1	4
Tick	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Yellow Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	116	152	140	155	109	94	146	128	137	109	114	177	1,577	1,853

TABLE XIX

NOTIFIED INCIDENCE OF COMMUNICABLE DISEASES IN QUEENSLAND (EXCLUSIVE OF VENEREAL DISEASES) SECTION 29 OF
“THE HEALTH ACTS, 1937 TO 1964,” DURING THE CALENDAR YEAR OF 1965

Disease	Metropolitan Area	Outside Areas	Total for Queensland 1965	Total for Queensland 1964
Ancylostomiasis	13	50	63	91
Anthrax .. .. .	..	..	..	..
Breast Abscess	12	11	23	16
Brucellosis	2	8	10	12
Cholera .. .. .	..	..	..	..
Dengue .. .. .	..	..	..	..
Diarrhoea (Infantile)	160	133	293	336
Diphtheria .. .. .	..	..	..	3
Dysentery (Amoebic)	3	13	16	72
Dysentery (Bacillary)	17	18	35	51
Encephalitis	5	4	9	12
Filariasis .. .. .	..	..	..	2
Hepatitis (Infective and Serum)	241	314	555	1,160
Hydatid Disease	1	1	2	1
Lead Poisoning	2	1	3	6
Leprosy .. .. .	..	1	1	6
Leptospirosis	11	64	75	102
Malaria	6	22	28	47
Melioidosis .. .. .	..	..	..	..
Meningitis	54	59	113	112
Neo-Natal Infections	1	8	9	4
Ornithosis (Psittacosis) .. .. .	..	1	1	3
Plague .. .. .	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic) .. .. .	..	2	2	7
Puerperal Infections	1	21	22	34
Q. Fever	84	276	360	188
Relapsing Fever .. .. .	..	..	..	..
Rheumatic Fever	47	62	109	100
Rubella	56	56	113	110
Scarlet Fever	80	91	171	73
Smallpox .. .. .	..	..	..	..
Taeniasis .. .. .	..	5	5	5
Tetanus	5	12	17	23
Tuberculosis	296	377	673	903
Typhoid Fever	2	..	2	4
Typhus Fever { Epidemic .. .. .	..	..	..	..
Murine .. .. .	..	1	1	1
Scrub .. .. .	..	2	2	9
Tick .. .. .	..	1	1	2
Yellow Fever .. .. .	..	..	..	..
Totals	1,100	1,614	2,714	3,495

HANSEN'S DISEASE

Medical Supervision: M. H. GABRIEL, B.Sc., M.B., B.S. (Q'ld.), D.P.H. (Sydney), A.R.A.C.I.

(1) HANSEN'S DISEASE IN THE WHITE POPULATION STATISTICS

—	Males	Females	Total
(a) Calendar Year, 1965			
Persons in isolation at 1st January, 1965	4	2	6 *
Admitted	1	..	1
Discharged .. .. .	..	1	1
Died .. .. .	..	..	..
Persons in isolation at 31st December, 1965	5	1	6 *
(b) Financial Year, 1965-66			
Persons in isolation at 1st July, 1965	5	1	6 *
Admitted	4	2	6
Discharged	1	2	3
Died .. .. .	..	..	..
Persons in isolation at 30th June, 1966	8	1	9 *

* These totals include one male and one female patient given special permission to remain in hospital although eligible for discharge.

The following comments refer to the financial year 1965-66.

The nine cases remaining in isolation at the end of June, 1966, had all been suffering from the disease for some years. Two patients were originally transferred from Brisbane Special Hospital and should be well enough physically to return there on completion of treatment. Three patients were admitted because they needed treatment for conditions other than Hansen's Disease and when this is given, they will be discharged. One patient who was previously treated in Darwin will need active treatment for some time. Another patient is well enough to have weekend leave. The remaining two patients have special permission to remain in hospital although eligible for discharge.

Ex-patients residing in the Metropolitan Area attend an out-patient clinic held weekly at the special ward at Princess Alexandra Hospital where in-patients are cared for.

Drug treatment remains unaltered, with dapsone forming the basis of all regimes. Diethyl dithiolisophthalate lotion or ointment and methimazole is added in certain instances.

(2) HANSEN'S DISEASE IN THE COLOURED POPULATION STATISTICS

—	Males	Females	Total
(a) Calendar Year, 1965			
Patients at 1st January, 1965 ..	10	8	18
Admitted	3	1	4
Discharged	3	3	6
Died	1	..	1
Patients at 31st December, 1965 ..	9	6	15
(b) Financial Year, 1965-66			
Patients at 1st July, 1965	8	7	15
Admitted	3	..	3
Discharged	6	6	12
Died .. .. .	..	..	..
Patients at 30th June, 1966	5	1	6

During the year 1965-66 there were three admissions and twelve discharges, leaving only six patients in isolation. The three admissions were all male patients who had had previous treatment but had shown positive signs during follow-up examination. The clinical history showed their relapse to be due to their failure to continue treatment, after previous discharge.

The twelve discharged patients were all well and in good physical condition at the time of their discharges.

It is pleasing to note that no new cases were detected during the year.

GENERAL

The Health Officer visited Fantome Island during the year. The details of isolation, treatment and general management remain unchanged from those in previous years. The six patients accommodated there are all reasonably well and it is expected that in time all but one will be well enough for discharge. The total in residence at Fantome Island is the lowest accommodated since the hospital was opened there in 1939.

Since the introduction of sulphone treatment in Queensland in 1947, there has been a marked change in outlook in the prognosis of Hansen's disease sufferers. The death rate has declined rapidly and a high proportion of patients have been discharged and remained well. While a problem remains it is not nearly so severe as it was twenty years ago.

SECTION OF ENTHETIC DISEASES

MEDICAL OFFICER IN CHARGE: GEOFFREY HAYES, M.B., Ch.M. (Syd.)

The total number of notifications of venereal diseases for 1965-66 was 1,652. This was a slight increase on the 1964-65 figures (1,540). Most other notifiable diseases show evidence of decline and the rise in venereal disease is a matter of concern. It is not a disease which is notified fully and therefore the actual number of cases in the community would be higher than the official number of notifications.

Venereal disease control measures were first taken at the time of the First World War when there were no specific remedies and treatment was a long process. At that time syphilis and gonorrhoea received most of the attention to the exclusion of other sexually transmitted diseases which have since been recognised. These latter comprise a major part of the cases seeking treatment at clinics.

Today the symptoms and discomforts of gonorrhoea and syphilis are rapidly controlled by antibiotics. Patients may obtain treatment from general practitioners and sometimes self-medication with antibiotics is practised. Unfortunately, many cases are either over-treated or under-treated. This results on the one hand in antibiotic resistant strains of organisms and on the other, symptomless carriers. For this reason difficulty is experienced in solving this public health problem.

In addition to treatment there is a great scope for health education in this regard, both lay and professional.

The accompanying tables indicate the work of this Division.

TABLE XX
NOTIFIED VENEREAL DISEASES IN QUEENSLAND, 1965-66

	Metropolitan		Outside Centres		Whole State		Total
	Males	Females	Males	Females	Males	Females	
Gonorrhoea—							
Unspecified	699	161	345	104	1,044	265	1,309
Acute .. .. .	..	50	12	14	12	64	76
Sub-acute .. .. .	..	4	1	7	1	11	12
Chronic .. .. .	..	2	1	..	1	2	3
Ophthalmia .. .. .	..	2	..	7	..	9	9
Vulvo-vaginitis .. .. .	..	..	..	..	..	..	..
	699	219	359	132	1,058	351	1,409
Syphilis—							
Unspecified .. .. .	..	1	..	..	..	1	1
Primary	39	13	16	11	55	24	79
Secondary	15	15	7	5	22	20	42
Tertiary	2	5	1	..	3	5	8
Latent	17	7	1	3	18	10	28
Neuro	1	..	1	..	2	..	2
Pre-natal (congenital) .. .. .	..	2	..	1	..	3	3
	74	43	26	20	100	63	163
Soft Sore	22	..	2	..	24	..	24
Venereal Warts	50	..	..	2	50	2	52
Ulcerative Granuloma	1	..	2	..	3	1	4
	73	..	4	3	77	3	80
	846	262	389	155	1,235	417	1,652
	1,108		544		1,652		
		1,652					

TABLE XXI
CENTRES OF NOTIFICATION OF VENEREAL DISEASE
OUTSIDE METROPOLIS

Centre	Males	Females	Total
Allora	1	..	1
Ayr	6	2	8
Babinda	1	1	2
Bowen	4	3	7
Bundaberg	9	6	15
Cairns	32	9	41
Caloundra	2	..	2
Charleville	12	1	13
Charters Towers	6	3	9
Clermont	3	1	4
Cloncurry	19	6	25
Collinsville	4	1	5
Coolangatta	2	..	2
Dalby	1	1	2
Dirranbandi	1	3	4
Emerald	4	1	5
Gayndah	3	..	3
Goondiwindi	1	..	1
Gordonvale	7	1	8
Gympie	1	1	2
Home Hill	4	1	5
Hughenden	4	3	7
Ingham	11	1	12
Innisfail	2	..	2
Ipswich	1	3	4
Jandowae	1	..	1
Julia Creek	3	1	4
Kingaroy	2	..	2
Laidley	5	1	6
Mackay	22	3	25
Mareeba	4	2	6
Margate .. .. .	..	2	2
Maryborough	11	7	18
Mossman	3	2	5
Murgon	7	5	12
Mount Isa	9	1	10
Oakey	2	..	2
Pialba	2	..	2
Pittsworth	1	..	1
Proserpine	3	3	6
Point Vernon	1	..	1
Quilpie	2	..	2
Redcliffe .. .. .	..	2	2
Rockhampton	20	3	23
Southport	11	3	14
Springure	1	..	1
Stanthorpe	1	..	1
St. George	1	..	1
Tara	2	..	2
Tneodore .. .. .	..	1	1
Thursday Island	49	40	89
Toowoomba	4	3	7
Townsville	67	23	90
Tully	1	..	1
Warwick	1	..	1
Winton	6	4	10
Wondai	2	..	2
Woody Point	2	1	3
Yeppoon	2	..	2
Totals	389	155	544

TABLE XXII
SHOWING NUMBER OF NOTIFICATIONS OF VENEREAL DISEASES
FOR PAST 20 YEARS

Fiscal Year	Notifications	Mean Population	Incidence per 1,000 Population
1945-46	1,309	1,084,125	1.207
1946-47	1,373	1,093,303	1.251
1947-48	1,000	1,114,634	.897
1948-49	846	1,140,816	.742
1949-50	731	1,173,232	.623
1950-51	626	1,207,194	.519
1951-52	627	1,239,868	.506
1952-53	757	1,272,244	.595
1953-54	740	1,300,464	.569
1954-55	741	1,328,064	.558
1955-56	807	1,360,801	.593
1956-57	995	1,394,088	.714
1957-58	1,018	1,422,349	.716
1958-59	965	1,405,535	.665
1959-60	1,021	1,478,128	.691
1960-61	1,436	1,503,703	.955
1961-62	1,525	1,526,959	.999
1962-63	1,473	1,551,500	.949
1963-64	1,322	1,571,982	.841
1964-65	1,540	1,595,057	.965
1965-66	1,652	1,615,384	1.022

TABLE XXIII
ALLEGED SOURCES OF INFECTION

Non-professional	1,318
Professional	77
Husband	26
Wife	33
Mother	4
Unknown	193
Father	1
Total	1,652

TABLE XXIV
MARITAL STATUS OF PATIENTS

	Males	Females	Total
Single	983	252	1,235
Married	204	121	325
Separated	31	24	55
Widowed	7	10	17
Divorced	4	10	14
Not Stated	6	..	6
Totals	1,235	417	1,652

TABLE XXV
SHOWING AGE GROUP OF NOTIFIED CASES

Age Group	Males	Females	Total
Under 1 year	1	2	3
1- 4 years .. .. .	..	..	..
5- 9 years	1	1	2
10-14 years .. .. .	..	7	7
15-19 years	217	155	372
20-24 years	456	101	557
25-29 years	214	43	257
30-34 years	132	33	165
35-39 years	80	25	105
40-44 years	49	18	67
45-49 years	18	11	29
50-54 years	18	3	21
55-59 years	11	4	15
60-64 years	5	3	8
Over 65 years	7	5	12
Not Stated	26	6	32
Totals	1,235	417	1,652

TABLE XXVI
SHOWING SOURCES OF NOTIFICATION

	Males	Females	Total
Private Doctors—			
Brisbane	84	14	98
Outside Centres	204	56	260
Totals	288	70	358
Clinics—			
Brisbane	720	215	935
Outside Centres	45	18	63
Totals	765	233	998
Hospitals—			
Brisbane	42	33	75
Outside Centres	140	81	221
Totals	182	114	296
Totals All Sources	1,235	417	1,652
	1,652		

SECTION OF DRUGS AND POISONS

Because of the introduction of new food additives, new food processing and manufacturing techniques, and the discovery of many new drugs it was approved, because of the increased experience necessary, that the Section of Food and Drugs be divided into two separate sections, each under the control of a chief inspector.

The new Section of Drugs and Poisons is charged with the implementation of the drugs and poisons sections of the Health Acts, the drugs sections of the Food and Drug Regulations, the Poisons Regulations, the Dispensary Regulations, the Dangerous Substances Regulations, and the Health (Insecticides) Regulations.

Drugs and Poisons

Inspections have been carried out at all levels of drugs and poisons transactions in the State. This has predicated inspections at warehouses, drug houses, wholesale and retail poisons dealers, private and public hospitals, institutions, convalescent homes, and the premises of pharmaceutical chemists. Furthermore, close attention has been paid to the activities of professional men, authorised by law to obtain, administer and prescribe dangerous (i.e. addictable) drugs. Although compliance with the law was, in the main, reasonable, it was found necessary to take court action against gross or persistent offenders. Three chemists were prosecuted for a total of ten charges for failure to carry out their legal obligations in regard to dangerous drugs, whilst severe warnings were issued to minor offenders in this regard. These prosecutions resulted in the imposition of fines totalling \$224 with costs of \$32.50. In addition, these offences were brought to the notice of the Pharmacy Board, which took appropriate action with the offenders. Police action in regard to the possession of restricted drugs by an unauthorised person resulted in a fine of \$60 with \$2.50 costs of court. Action is pending against one poisons dealer and several chemists for breaches of the Poisons Regulations.

One of the basic requirements of the Health Acts and Regulations in regard to poisons and drugs is the correct packing and labelling of these substances to ensure that the purchaser is made fully aware of the nature of the substance and any precautions to be observed in its use. These matters have received the continual attention of the staff and it is pleasing to report satisfactory progress in this regard.

Difficulties are experienced because of the varying requirements of the States but every endeavour is being made by the National Health and Medical Research Council to achieve uniformity.

It has been possible this year to extend activities in regard to the checking of the quality of drugs, particularly the more common patent medicines, for sale on the local market. The range of samples obtained included calomine lotions, glycerines, iodine tinctures, aperient salts and effervescent salines, antacid powders and other indigestion preparations, and cough mixtures. Generally, the preparations were found to be of reasonable quality and efficacy, appropriate action being taken with any offending lines.

This department enjoys excellent co-operation with the drugs and poisons trade and the advice of officers is continually sought by manufacturers and packers as to the correct packing and labelling of their products. The Government Chemical Laboratory has analysed samples of therapeutic drugs, pencils, crayons, detergents, cleaners, toilet preparations and insecticides.

Close liaison has been effected with the Department of Customs in regard to contraband stocks of tobacco and cigarettes offered for sale by that Department at the Queen's Warehouse. Checking of the quality of these goods has resulted in some 250,000 cigarettes and 11½ pounds tobacco being destroyed as unfit for smoking.

Unwanted and deteriorated drugs of all kinds are continually handed in to this Department by hospitals, institutions, chemists and other professional men. A similar state of affairs exists in regard to poisons, and this department receives appreciable quantities of unwanted poisons for safe disposal. All drugs and poisons received during the year were forwarded to the Government Chemical Laboratory which effected their safe destruction and disposal.

Many other miscellaneous samples of drugs and poisons were submitted by the public and these included drugs for checking as to their efficacy or suspected of not having been properly dispensed.

As a result of all the above activities, more than 1,300 samples were submitted to the Government Chemical Laboratory during the year and full details of these samples may be seen in the report of that Laboratory.

Disinfectants have been submitted to the Director of the Laboratory of Microbiology and Pathology for checking of their germicidal claims and details of these examinations may be found in that section of this report.

An event of interest during the year was the inauguration of a scheme for the collection of surplus, but still serviceable, drugs by a charitable organisation for later distribution to hospitals and institutions in under-privileged countries. Rigid conditions were laid down by the department to ensure safe transport and storage of the collected drugs and the scheme would now appear to be working satisfactorily.

Drug addiction is a world-wide problem which exercises the mind of the World Health Organisation, and Queensland, as part of the Commonwealth is, *ipso facto*, a signatory to the articles of the Single Convention on Narcotic Drugs and is bound to take all steps to control drug addiction. This State had adopted the list of dangerous (or addictable) drugs issued by the World Health Organisation and has stringent regulations dealing with all transactions in dangerous drugs. The requirement that all cancelled prescriptions for dangerous drugs must be remitted to this department ensures full knowledge of the uses of these drugs. Generally, there has been excellent co-operation by the trade but, as the success of control is entirely dependent on complete compliance with this law, it has been found necessary to take legal action against some serious defaulters. In this regard, it is interesting to remark that the installation of a completely new processing and filing system for these prescriptions has enabled the staff to detect offenders more quickly than before and, as a result, control has been immeasurably improved.

Two conferences were held between Commonwealth and State officials in an endeavour to obtain uniform control of advertising of medicines. A submission has been made for consideration by States which should achieve this end.

The Chief Inspector, who is a member of the Uniform Poisons Committee of the National Health and Medical Research Council, attended meetings of that subcommittee as well as a conference with Commonwealth and State officials to discuss the control of dangerous drugs.

Dispensary Regulations

These regulations require that dispensaries must be provided with standard equipment and all books of reference necessary to ensure the accurate dispensing of medicines. Some difficulty was encountered due to certain equipment being in short supply but these shortages would now appear to have been overcome. It is expected that all requirements of the regulations will be fulfilled in the coming year.

Dangerous Substances Regulations

These regulations, which deal with substances not sufficiently toxic to warrant their inclusion in poisons schedules but toxic enough to present a hazard in the home, have received constant attention by the staff. Preparations in this category have been checked for packing and labelling requirements and appropriate action taken to ensure compliance with the provisions of the regulations. Local packers of dangerous substances have co-operated fully with the department and little, if any, trouble has been experienced with them. However, difficulties are encountered from time to time with packs of interstate origin, mainly due to the requirements of the other States differing from those of Queensland.

These regulations have now been in force for over five years and it is felt that their purpose is being steadily achieved. The cautionary statements, which are required by law to be on the label, have played no small part in making the public more conscious of the need for care with these substances, but carelessness on the part of some parents in ignoring the cautionary notices has been responsible in a number of cases of accidental poisoning.

Health (Insecticide) Regulations

The number of preparations which come within the scope of these regulations is not large, as the normal insecticide, because of the nature of its vehicle, qualifies as a dangerous substance and is subject to the provisions of those regulations. However, new preparations, particularly of the aerosol type, do appear and these preparations received the attention of this section.

SECTION OF FOOD SUPERVISION

A re-organisation of existing staff facilities during the year has enabled the establishment of an Inspectorial section charged solely with the implementation and supervision of the State's food legislation—a progressive step which will facilitate a more comprehensive and specialized coverage of this important field, particularly in the metropolitan area where the majority of the State's food processing plants are established.

In addition to the relevant provisions of The Health Acts and The Food and Drug Regulations, the section administers The Health (Food Supply) Regulations and The Milk-sellers Regulations, and acts in a supervisory and advisory capacity in the implementation of The Cafe Regulations and The Health (Food Hygiene) Regulations by the various Local Authorities throughout the State.

These duties involve the sampling of foods to ensure compliance with prescribed standards and labelling requirements, inspections at all levels of food manufacture, processing, preparation, storage, distribution, and sale, and generally all activities necessary to ensure compliance with the State's food laws.

Milk and Milk Products

Supervision of milk distribution has formed a major part of the section's activity, and all sources of supply have been sampled regularly. Details of the samples obtained for bacteriological and chemical analysis may be found in the reports of the Laboratory of Microbiology and Pathology and the Government Chemical Laboratory respectively.

Pasteurised milk or treated bottled milk now constitutes the bulk of milk sold in the State, and its quality has been maintained at a safe level. Most complaints from the public centred on incompletely washed bottles or bottles containing foreign objects. While the number of these is exceedingly small in relation to the huge output, consumers expect, and are entitled to receive, clean and sound bottles. The problem is not one peculiar to this State or to Australia, and, in spite of all precautionary measures adopted, no permanent solution appears imminent. However, the largest producer in the metropolitan area is in the course of installing electronic scanning devices which, while not a complete answer in themselves, must contribute greatly to the elimination of these hazards. The outcome will be watched with interest.

Regular surveys have been made of ice cream and other milk products, and the standards of these have been maintained at a satisfactory level.

Three persons were convicted and fined a total of \$92 with \$31 costs in respect of the offence of selling milk adulterated with water, two cases taken under the Milk-sellers Regulations in respect of an unsuitable milk delivery vehicle and utensils resulted in fines totalling \$20 and costs of \$26, and one prosecution launched in respect of the offence of pre-dating pasteurised milk resulted in a fine of \$50 with \$6.70 costs.

Minced Meat, Sausages

The addition of preservative to minced meat by butchers is still prevalent in spite of the many years of punitive action in this field. Forty-three butchers were successfully prosecuted during the year for selling minced meat adulterated in this manner, and fines of \$770 with \$282 costs were imposed.

The position in respect of excess preservative in sausages and sausage meat has shown some improvement, and only six prosecutions were undertaken for breaches of this nature. Fines of \$182 with \$40.20 costs were imposed.

Bread and Flour

Bread samples of all varieties secured for examination from all parts of the State indicated a fair average quality of baking, while samples of flour secured at intervals from the various mills revealed only minor defects. All deficiencies reported in these examinations were drawn to the attention of the manufacturers involved. Details of the sampling are included in the report of the Government Chemical Laboratory.

An instance of pink mould in bread was reported from a metropolitan bakehouse, and an outbreak of "rope" occurred at a country centre. In both cases, appropriate advice was given as to corrective measures necessary.

The trend towards preference by the public for pre-wrapped bread has continued to a degree where, in the metropolitan area and major country centres, production is well in excess of unwrapped bread.

Hotels, Liquor Testing and Glasswashing

By agreement with the Licensing Commission, the relevant provisions of the Food and Drug Regulations are now implemented by Inspectors of this Department in all matters pertaining to the preparation and serving of food at hotels and other licensed premises where no major structural alterations or additions to buildings are involved. The arrangement has worked well, and many minor faults of this nature have been corrected promptly, and without recourse to further action by the Commission.

As a result of routine testing of alcoholic liquors in bars to ensure compliance with the prescribed standards, one prosecution for the sale of adulterated brandy was instituted, and a fine of \$8, with \$2.50 costs, was imposed.

Particular attention was again given to the denaturing of waste beer at hotels, and the provision of adequate and effective glasswashing apparatus. Successful legal action was taken against 22 persons, licensees or their employees, for breaches of the legislation requiring a clean glass to be served with each drink. Fines of \$492, together with \$55 costs, were imposed.

Soft Drinks, Cordials

A wide range of samples secured from all parts of the State indicates a generally satisfactory compliance with the prescribed standards. Most persistent faults disclosed were slight excesses of preservatives, and minor labelling breaches. Premises and plant were maintained in a safe hygienic condition, and the trend towards new buildings and equipment continues.

Several instances of foreign objects in bottles purchased by the public were investigated, and appropriate action taken to eliminate possible sources of introduction.

One manufacturer was convicted and fined \$16 with \$6.70 costs in respect of the sale of adulterated fruit drink—soda squash deficient in fruit juice content.

Food Manufacturing and Processing Premises

The growth of secondary industry in the State is reflected in the greatly increased number of premises engaged in the manufacture or processing of foods. This expansion, together with the current movement of industry towards decentralisation in the outer suburban areas, has resulted in the erection of a number of excellent and well-equipped factories approaching world standards, but it has also presented problems, particularly among small operatives, where all instances of unsuitable or overcrowded premises and faulty hygienic practices have received appropriate attention.

There has been a tendency on the part of certain manufacturers to allocate some routine processes on a piece-work basis to persons operating in their own homes—a most unsatisfactory state of affairs which, if unchecked, could largely nullify protective legislation. There is no place in modern mass food production for cottage industry.

Wine Manufacture

The campaign to improve the standard of premises used in the manufacture of wine for sale in the Stanthorpe District has produced good results, and the position in general is now satisfactory.

Fish

Two officers are engaged on full-time duty checking the quality of fish and marine products at Brisbane Fish Markets and at all retail outlets. As a result of these activities, a total of 61 tons 19 cwt. 2 qrs. 19 lb. of assorted fish and prawns, together with 1,933 crabs, was certified as unfit for human consumption and destroyed. District Officers destroyed a further 1 ton 13 cwt. 1 qr. 2 lb. of fish at various coastal receiving depots.

A large consignment of frozen fish fillets imported from Japan was found to be infested with live nematodes—a condition not uncommon in certain fish taken in northern hemisphere waters, and the reported cause of illness among persons consuming the fish in a raw or partly cooked state. The fish was certified as unfit for human consumption and was subsequently destroyed. Numerous specimens of the nematodes were made available to the University of Queensland where research is currently in progress in this field.

Unsound Food

Officers have checked food quality at all points of distribution and sale, and, as a result of these activities, a total of 82 tons 11 cwt. 2 qrs. 26 lb. of assorted foods was certified as unfit for human consumption and destroyed under Departmental supervision.

Contaminated Water in Drink Coolers

A popular novelty of Far Eastern manufacture—water filled plastic shapes intended to be frozen as required for immersion in drinks instead of ice—was examined following reports from overseas of pathogenic contamination of the water content.

Preliminary examinations indicated a potential health risk, and, as a consequence, the sale of the articles was suspended pending a detailed survey of the position. Many samples of a wide variety were examined here and in the other States, and, while the overall results showed considerable bacterial and fungal contamination, principally types normally associated with unsterilized water, no pathogenic organisms were detected.

It would appear that the elementary precaution of boiling all water used in these novelties would resolve the position, and it is understood that such a course has now been

adopted in the country of origin. The co-operation of the trade, both wholesale and retail, in withholding distribution while the position was determined is acknowledged and appreciated.

Local Authority Supervision

The enforcement of The Cafe Regulations and The Health (Food Hygiene) Regulations, which are concerned with the safe and hygienic handling of food at cafes and eating houses and retail stores respectively, is the responsibility of Local Authorities throughout the State. While reports of Departmental officers indicate a generally reasonable standard at these premises, it is apparent that a few Councils still do not appreciate sufficiently the necessity for constant vigilance in this important sphere.

Check Sampling

In addition to the many legal samples obtained by officers, details of which are supplied in the reports of the Government Chemical Laboratory and the Laboratory of Microbiology and Pathology, some 2,000 samples of a wide range of foods were submitted for unofficial chemical analysis to determine compliance with standards, labelling requirements, or suitability for human consumption, and 378 for bacteriological examination for quality control purposes.

Complaints

All complaints concerning food were investigated promptly, and appropriate action taken where necessary.

No major instances of food poisoning were reported during the year. As is usually the case, numerous individual complaints of alleged symptoms after consuming certain foods were investigated, but in only three instances were these definitely established as being attributable to unsound food.

Miscellaneous Prosecutions

Two successful prosecutions were instituted against a confectionery manufacturer for the use of unapproved food colours in confectionery. Fines of \$80 and costs of \$13.40 were imposed.

Three prosecutions under the Health Acts for refusal to sell a sample, refusal to state name, and assaulting an officer respectively, resulted in total fines of \$40 and costs of \$32.40 being awarded.

Legislation

The only new legislation incorporated during the year was an amendment to "The Cafe Regulations of 1955" consolidating and bringing up to date the schedule of Local Authorities vested with licensing powers under the Regulations.

Representation on the Uniform Food Standards Committee of the National Health and Medical Research Council was continued during the year.

SECTION OF ENVIRONMENTAL SANITATION

INSPECTORIAL SUPERVISION

Environmental health is a very personal thing, touching each person in the State individually. To be most effective, it requires a personal contact between the State's health authorities and the individual.

This personal contact is achieved through the Local Authority Health Inspector who acts as the Director-General's agent in making the health laws of the State known personally to the residents of his particular area. Queensland is a very large State. Its population varies from dense concentration in sections of the coastal belt and nearby areas, to great sparsity in western areas. The 164 Health Inspectors employed by Local Authorities throughout the State do excellent work in making contact with their public. But when related to the total State population of 1,616,087 (at 26th March, 1966) the dispersal rate is 9,850 persons per inspector. It is apparent that this rate should be reduced before the desired extent of personal contact between Inspector and householder can claim to be adequately met. Some Local Authority areas are excellently served with Inspectors, but others are not so fortunate, and it is to be regretted that some densely populated areas come within the latter group.

WASTE COLLECTIONS AND DISPOSAL

From the very beginning of communal life, the disposal of waste organic matter has been the most important single factor affecting environmental health. It still remains so.

Sewerage:

The water carriage system (sewerage) whereby almost all wastes associated with our domestic as well as our industrial environment, are piped to a central point for biological treatment is still the most efficient means available to us in meeting this problem.

Progress in the provision of this important type of waste disposal throughout Queensland continues at something of a steady, perhaps even slow, pace. Sewerage is an amenity which must be regarded as an essential for every reasonably large community of people which has sufficient water to allow its installation. The benefits accruing from acceleration of installation programmes throughout the State would directly affect the health and well-being of its residents.

During the year, following an investigation into the prevalence of *Cysticercus bovis* infection in cattle (an infection which is transmissible to man) it was decided in conference with officers of the Departments of Local Government and Primary Industries that cattle should be prevented wherever possible from having direct access to the effluent of sewerage treatment plants for drinking purposes, and that care should be exercised in the use of such effluent for pasture irrigation.

Septic Tanks:

There are several reasons why septic tanks, although they fulfil a very useful purpose, are not a satisfactory substitute for sewerage. They dispose, in most cases, of body wastes

only and leave the householder and the factory manager with the often acute problem of disposing of laundry, kitchen, bathroom and factory wastes. The effluent from a septic tank can often, in itself, create a health hazard.

Pan System:

The pan system of nightsoil collection and disposal is still widely practised throughout the State. Reports reaching this Section indicate that despite the many problems associated with the system, it is generally carried out in a satisfactory manner. It has been found however that constant supervision is essential to maintain a satisfactory standard.

These remarks apply to refuse disposal. Many Local Authority areas in which the methods employed did not meet the required standards have shown marked improvement.

WATER SUPPLIES

A total of 322 chemical samples of water (an increase of 13 per cent. on last year) and 1,597 bacteriological samples (an increase of 118 per cent.) were received at the Department for examination regarding suitability for human consumption. The staggering increase in bacteriological samples is mainly due to the surveillance of meat killing works throughout the State by officers of the Commonwealth Department of Primary Industry. In a few instances, beef export licenses were withdrawn from killing works where the water supply failed to meet a satisfactory bacteriological standard. This action spurred Local Authorities into taking regular check samples of their water supplies to ensure that a satisfactory standard was maintained.

WATER POLLUTION

The problems of river and stream pollution are extending throughout the State. There are many complex features associated with river pollution which require specialised engineering knowledge to be correctly evaluated. The Department of Local Government, through its officers, has readily made this expert knowledge available to this Department where requested, particularly in relation to the pollution of streams by sugar mill wastes. But Local Authorities and the general public both look to this Department for relief from the offensive odours associated with river pollution. As the State develops both agriculturally and industrially, it becomes increasingly clear that legal machinery is required to safeguard our waterways from pollution.

In conjunction with the Brisbane City Council, the Department carried out a joint survey of the extent of pollution in the Brisbane River with particular reference to the effect of the discharge of untreated nightsoil at Luggage Point on either the river or the suburban bayside beaches. The survey revealed some pollution of the River within the main City area but not to any extent which would give rise to particular concern. There was no evidence to indicate that the disposal of untreated nightsoil at Luggage Point had any serious effect on either the river water or the bayside beaches, but localised pollution of the northern bayside beaches, attributable to storm water drains, was detected.

TOYS

Further progress was made during the year in the Department's campaign to ensure that only lead-free toys were sold within the State. Apart from the main city retail stores, inspections were made of chemist shops, newsagents and other toy retailers in the suburbs or near metropolitan areas, and although the scrutiny was a wide and thorough one, only a small quantity of suspect Chinese toys were detected. In each case these were returned to the distributing agent who disposed of them outside the State and no legal action was required.

Retailers throughout the State now appear to be reticent to accept toys from a distributor unless the certificate number of a Queensland Analyst is quoted at the time of sale, declaring that particular toy to be free of lead paint. As a result it is now very difficult to buy a toy containing lead in Queensland and one further hazard has been removed from the reach of children.

LEAD PAINT

For some years now the use of paint containing lead on any part of either the exterior or interior of any house or building, or any furniture, has been prohibited. Surveillance of this law was maintained during the year and 33 snap samples were removed for examination from the pots of painters at work. None of these samples was found to contain lead.

Furniture factories and wrought iron manufacturers were also closely checked in this regard. Apart from one furniture manufacturer who was found to be applying leaded paint to the interior of the drawers of a dining room cabinet, no breaches of the Act were detected.

RODENT CONTROL

Rodent control still remains an important feature of our defences against the spread of disease. We cannot afford to become complacent about the dangers of this pest. Several Local Authorities continue to employ special staff for the purpose of detecting and destroying rats. Table XXVII shows the number of rodents destroyed by these Local Authorities during 1965-66.

TABLE XXVII

City					Rats	Mice
Brisbane	..	..	..	..	36,893	3,409
Bundaberg	..	..	..	..	83	..
Cairns	..	..	..	..	1,047	641
Gympie	..	..	..	..	150	..
Ipswich	..	..	..	..	322	..
Mackay	..	..	..	..	1,271	742
Maryborough	..	..	..	..	164	..
Rockhampton	..	..	..	..	1,602	..
Townsville	..	..	..	..	231	..
Totals					41,763	4,792
Total all rodents 1963-64					..	57,919
Total all rodents 1964-65					..	52,332
Total all rodents 1965-66					..	46,555

MISCELLANEOUS

- The following work to which special mention has not been given above was carried out by this section during the year:—
- Inspections of the hygiene and sanitation at hotels, hospitals and some Government Institutions.
 - Collection of samples to determine the extent of pollution in the North Pine River by effluent from the Australian Paper Mills at Petrie.
 - Investigation of the health problems associated with the lagoon treatment of farm wastes on the intensified type of animal farm, where several hundred animals are farmed in a small area.
 - Testing chlorine residual in school and public swimming pools.
 - A code covering both desired structural features and method of management and control of swimming pools was circulated to Local Authorities for their guidance.

HOOKWORM CONTROL CAMPAIGN

The staff consists of two health inspectors with headquarters at Cairns. During the year a total of 4,023 specimens was examined, of which 3,760 were from coloured persons. Of these 177 (4.7 per cent.) were positive. This is slightly less than the previous year's figures when the number of positives was 5.2 per cent.

Surveys were carried out at Yarrabah, Coconut Island, Warraber Island, Horn Island, Gorge Community (Mossman), and the Aboriginal Reserves at Cooktown, Coen, Chillagoe, Malanda, Herberton, Ravenshoe, Mt. Garnet and Lyons Street Hostel, Cairns. These settlements are under the control of the Department of Aboriginal and Island Affairs.

Missions under the control of religious denominations visited were Weipa, Aurukun, Hopevale, Bloomfield, Lockhart and Mitchell River Missions.

In addition, inspections were carried out in the Local Authority areas of Mareeba, Cardwell, Cook, Mulgrave, Hinchinbrook, Johnstone, Herberton, Douglas, Eacham, Atherton and Cairns City.

Sanitary conditions were inspected in each area visited and when necessary, defects were drawn to the attention of the various authorities concerned.

The extent of hookworm infestation in the age groups examined is shown in the following table:—

—			Number Examined	Number Positive	Percentage Positive
Pre-School	..	..	718	40	5.5
School	..	..	1,316	63	4.7
Adult	..	..	1,726	74	4.5

From this it will be seen that the incidence is much the same in all age groups. The slightly higher rate in the pre-school group may be attributed to incomplete cures as some difficulty is experienced in administering Alcopar (behenium hydrochloride) to young children and the fact that this age group has a greater exposure to reinfestation.

Further diminution in the disease can be expected as the result of health education aimed at the prevention of ground pollution. During the year inspectors assisted in the conduct of such a course of instruction at Yarrabah Aboriginal Community. Two representatives from the Mitchell River Mission attended and their efforts at further instruction on their return to their own settlements will be watched with interest.

DIVISION OF AIR POLLUTION CONTROL

Director of Air Pollution Control: ALAN GILPIN, B.Sc. (Econ.), M.I.P.H.E., M.Inst.F.

The Director arrived from England and took up his position on 16th August, 1965. His responsibility is to implement, subject to the Minister for Health and the Air Pollution Council of Queensland, *"The Clean Air Act of 1963"*.

The Act was the outcome of a survey of air pollution in Brisbane and Ipswich carried out in 1959-60. The purpose of the Act is to prevent and minimise air pollution. It defines "air pollution" as "the emission into the air of any air impurity". Air impurities specified in the Act include "(a) smoke, soot, dust, ash (including fly ash), cinders, solid particles of any kind, gases, fumes and mists; and (b) odours of an offensive or noxious nature produced solely by an industrial plant".

The Act is brought into operation by proclamation within the Local Authority areas specified in the proclamation. The Act was proclaimed on 8th May, 1965, in Brisbane and Ipswich. It is expected that the Act will be brought gradually into force in other areas of the State. The Act is binding on the Crown, and industries, vehicles and vessels of all kinds come within its scope. The Act divides industry into "scheduled" (broadly, the heavier industries) and "non-scheduled". Scheduled industries will be licensed.

The appointment of the Director enabled progress to be made in carrying out the provisions of the Act. It will, however, be some time before the laboratory facilities and necessary staff are available to provide a full advisory service to those industries needing assistance in the solution of technical air pollution control problems, and to undertake the scientific investigation of air pollutants in the atmosphere.

Since arriving in Brisbane, the Director's activities have consisted broadly of the following:—

- (a) Familiarising himself with the air pollution problems of Queensland, both present and prospective. While air pollution is a universal problem, nevertheless each area and locality presents unique characteristics. To appraise these is no easy task;
- (b) Giving constructive advice to industry on air pollution control measures to be adopted to achieve the standards of performance clearly envisaged by the Act;
- (c) Drafting Regulations to be made under the Clean Air Act in relation to licences for scheduled industries and chimney emission standards;
- (d) Meeting members of the public aggrieved by local problems;
- (e) Preparing schedules and specifications of monitoring equipment, laboratory equipment, chemicals and glassware, required by the Division's proposed laboratories and for field purposes;
- (f) Assessment of staff requirements.

Tours

The Director has made three excursions from Brisbane to visit towns further north, including:

- (a) Nambour, Bundaberg, Maryborough and Gladstone;
- (b) Cairns, Innisfail, Townsville and Mackay; and
- (c) Mount Isa,

for the purpose of visiting smelting plant, sugar mills and other industry (including the site of the new alumina works at Gladstone), meeting local councils and members of the public, initiating discussions with the Sugar Research Institute and appraising the need for extending the Clean Air Act to other areas.

Two visits have been made to Sydney for the purpose of studying the administration of the Clean Air Act in New South Wales. The second visit was also concerned with the setting up

of the Clean Air Society of Australia, of which the Director has been made a Vice-President. The Director also attended the 4th Annual Meeting of Air Pollution Officers in Melbourne; all the States of Australia and New Zealand were represented. The next meeting is planned to be in Brisbane.

Conferences

The Director attended as a delegate at the Second Australian Clean Air Conference held in Sydney in August 1965. In March 1966, he attended a Wood-Waste Burning Conference held in Auckland, New Zealand, and was able to study the Air Pollution Laboratory in Auckland and to visit some of New Zealand's industries in the North Island.

Lectures

Lectures on the Clean Air Act and its implications have been given to the following organisations:—

- (a) Annual Meeting of the Brickmakers Association;
- (b) University of Queensland—medical students;
- (c) Redcliffe Branch of Rotary;
- (d) Queensland Women's Electoral League;
- (e) Brisbane Insurance Group.

Advice to Industry

Some examples of the subjects on which the Director has given constructive advice to industry are indicated in the following list:—

- (a) Distribution of air pollution measuring instruments around new major plant;
- (b) Bag filtration of zinc oxide;
- (c) Arrestation of brown fume from the manufacture of steel;
- (d) Time lapse photography;
- (e) Determination of chimney heights, and chimney design;
- (f) Dust arrestor specifications;
- (g) Firing of brick kilns;
- (h) Proposed new boiler plant;
- (i) Wood waste burning;
- (j) Odours from sewer ventilation systems.

Regulations

The Clean Air Act provides for the making of Regulations for a wide variety of matters for the purpose of furthering the general aims of the Act. The preparation of Regulations governing the licensing of scheduled industries and chimney emission standards has probably been the most important contribution of the Director during his first ten months in Queensland. At its meeting on Wednesday, 15th June, 1966, the Air Pollution Council of Queensland received the Draft Clean Air Regulations for consideration. The drafting took account, in relation to Queensland conditions, of Regulations in force in New South Wales, Victoria, New Zealand, the United States of America, the U.S.S.R., the United Kingdom and several European countries.

Air Pollution Council of Queensland

The Air Pollution Council met on three occasions during the year to receive reports from the Director. One of these meetings was held at the Darra works of the Queensland Cement and Lime Coy. Ltd., at the invitation of Mr. L. J. Jones, a member of the Council, and members were able to inspect the works.

DIVISION OF TUBERCULOSIS

Director: E. W. ABRAHAM, M.D. (Melb.), M.R.C.P. (Lond.)

Assistant Director: CYRIL EVANS, M.B., B.S., D.T.M., M.R.C.P. (Lond.)

Chest Physician, Toowoomba: GWYN HOWELLS, M.D., M.R.C.P. (Lond.)

Chest Physician, Cairns: R. J. B. ANDERSON, M.B., Ch.B., T.D.D. (Wales)

Chest Physician, Rockhampton: P. A. M. DALE LACE, M.B., Ch.B.

Chest Physician, Townsville: J. R. CLARKE, M.B., B.S., M.R.C.P. (Edin.)

STAFF

Dr. Cyril Evans has returned to duties in Brisbane after two years with the World Health Organisation at the Tuberculosis Chemotherapy Centre, Madras.

Dr. Gwyn Howells, from the Toowoomba Annexe, has been appointed as Commonwealth Director of Tuberculosis, Canberra, and is to be replaced by Dr. Edward Robinson.

Dr. K. L. Thong has commenced duties as Medical Officer, Chest Clinic, Brisbane.

BUILDINGS

In November, 1965, the Health and Welfare Building was opened and the Chest Clinic transferred its main function from Wickham Terrace to the ground and first floors. With the improved conditions of work, a marked improvement in patient-flow has occurred, while the installation of automatic processing has very considerably improved the processing of X-ray films. Alterations to the Wickham Terrace building, now in hand, will also improve clerical facilities concerned with the mass miniature X-ray campaign, and the establishment and equipment of an X-ray Engineer's workshop is also in hand.

GENERAL

Notifications for the year were 607 (Tables XXVIII, XXIX, XXX and XXXI). These show a drop of 184 since 1964-65 and this is the first major decline in numbers since commencement of the campaign to eradicate tuberculosis in 1948. On one previous occasion, in 1956, notifications have shown a similar drop which was not sustained and for which no explanation is apparent. On this occasion, however, the drop seems more likely to be sustained as it occurs at the end of the first compulsory X-ray survey of Brisbane—all surveys now will be in populations which have already been surveyed at least once. If this drop is sustained in the forthcoming year it must be accepted as genuine and indicating the first sign of success in our control efforts. Cases found by mass radiography were 128 this year as compared with 325 last year (Table XXVIII). As a majority of new cases are in the older age group (Table XXIX) it seems probable that most of them result, not from new infection, but from re-activation of previous infection which may or may not have caused pulmonary lesions visible radiologically. As a result of our various X-ray surveys most persons with abnormal lungs are now under regular X-ray scrutiny of their lungs and though many of them will relapse, these relapses should be detected early, before there has been the opportunity for them to infect others.

Following the conclusion of his appointment with the World Health Organisation, Dr. Cyril Evans visited several centres where research into tuberculosis problems is being sponsored by that body. This has resulted in his obtaining for the benefit of our Division an up to date idea of the trends in research and treatment in many countries including India, Italy, Hungary, Czechoslovakia, Japan and Hong Kong. While there are many differences between the problems of a "developed" and "under-developed" society, the fundamental difficulty—of persuading people to take drugs for long periods—is the same in both.

Points of interest from his report to the Director-General upon his return include emphasis on fundamental biochemical, genetic and bacteriological research into the mycobacterial group in many centres: emphasis on international co-operative studies into drugs and their side effects, particularly in the assessments of new compounds. This has uncovered racial differences in toxicity, a possibility rarely considered: emphasis on the advantages we enjoy in Australia in that we can admit

our cases to hospital to initiate chemotherapy with consequent better control of drug toxicity and allergic reactions, and to ensure that until patients convert their sputum they really take their drugs.

ATYPICAL MYCOBACTERIA

(Table XXIX)

A smaller number of 'cases' of tuberculosis due to infection with these organisms was recorded this year. The riminophenazine drug B.663. (Geigy G.30320) proved unsuccessful in a trial conducted upon a small number of patients infected with Battey mycobacteria. It appears to be of value in the treatment of ulcers due to *M. ulcerans* however, and also is reported of value in acute lepromatous forms of Hansen's disease. No consistent results have yet been found in treating cases of this condition with any drugs, though surgical resection, where possible, is usually successful.

In this connection, the Director was fortunate enough to take part in conferences held at Munich and the Borstel Medical Research Institute, near Hambourg, during October, 1965. At both these meetings atypical mycobacteria were a major topic of discussion and many papers were read on the epidemiology, clinical features and fundamental bacteriological features.

A vast amount of fundamental research is being undertaken into laboratory features of these organisms, ranging from electron microscopy, biochemical and enzymatic studies, to phage typing and drug susceptibility studies. Little has been done, however, at the clinical level except for tuberculin testing. Probably the most important studies required are of the number of cases occurring in various areas. The most disquieting feature of this problem is the possibility that disease due to atypical mycobacteria may be increasing as that due to true *M. tuberculosis* diminishes—a replacement phenomenon. The only way in which this can be determined is by close and accurate documentation of cases over a long period.

LUNG CANCER

(Table XXXIII)

One hundred and sixteen cases of lung cancer passed through the Chest Clinic, the largest number yet seen in any year. The practice of representatives of the Chest Clinic, Queensland Radium Institute and Thoracic Surgeons meeting to co-ordinate treatment has been continued.

COUNTRY CLINICS

These clinics are increasingly important as numbers of cases under supervision increase. Clinics are held regularly at the following centres:—

From—

Cairns	..	Atherton, Herberton, Mareeba, Innisfail, Tully.
Townsville	..	Charters Towers, Cloncurry, Mount Isa, Proserpine, Ayr, Ingham.
Rockhampton		Mount Morgan, Mackay, Gladstone, Longreach, Monto, Mundubbera, Eidsvold, Gayndah.
Toowoomba		Dalby, Roma, Charleville, Stanthorpe, Warwick.
Brisbane	..	Bundaberg, Maryborough, Gympie, Nambour, Ipswich, Southport, Cherbourg Aboriginal Settlement and Kingaroy. A clinic will shortly be added at Redcliffe.

MASS RADIOGRAPHY

(Tables XXXIV, XXXV, XXXVI and XXXVII)

Remote Areas Unit. A successful survey of the Torres Straits area was conducted in the latter half of 1965. The X-ray unit—a battery-operated X-ray plant—was carried by sea about the Gulf Mission and Torres Strait Islands. The help of the Department of Aboriginal and Native Affairs in arranging transport is gratefully acknowledged. The areas visited were Thursday Island, Boigu Island, Cowal Creek, Horn Island, Weipa, St. Paul's Mission, Saibai Island, Yam Island, Lockhart River Mission, Edward River Mission and Mitchell River Mission. In all 39 active cases have so far been found. Considerable delay occurred in investigating some less urgent cases due to the acute water shortage on Thursday Island in November-December, 1965. It was not practicable to bring more folk to the Island. When the Wet commenced communication with Gulf Missions was cut so cases were not brought to Thursday Island for investigation until March or April, 1966. The numbers found warrant a return visit to this area in no more than two years.

This unit is now being fitted to undertake surveys of remote mainland areas: owing to staff changes it has not, unfortunately, been possible to proceed with this without considerable delay.

The major effort in the mass miniature radiography field has fallen heavily on the Brisbane Chest Clinic staff this year as all five units have been engaged in areas which come under Brisbane Chest Clinic medical staff supervision. This has required, in addition to regular work, additional clinics both at the Chest Clinic and at follow-up centres throughout the area from Bundaberg to Southport after the mass radiography units have finalised their work.

Record Filing: The full value of mass chest X-ray surveys does not stop when the initial survey is completed—benefits accrue for many years in different ways, from the supervision of cases of inactive chest disease and from the possibility of comparison of films, taken sometimes years after the survey, with the original survey film. To achieve this films must be readily accessible. This requires adequate cross-indexing by name alphabetically (films themselves are filed numerically in rolls). Space and semi-automatic equipment for this purpose are now available at the Chest X-ray Centre and these films are more accessible than ever before. By checking back to previous surveys changes seen in a film from a new survey may be sufficient to justify treatment for a new lesion—similarly, a minor abnormality may be noted which, though previously present, was not considered significant and so the recall of such a patient is avoided.

ENFORCEMENT OF COMPULSION

So far 10 prosecutions for failure to attend for X-ray have been undertaken and all have been successful. The value of such prosecutions, distasteful as they are in this service, is shown remarkably in two instances—in one case a man who initially refused X-ray and who agreed to a chest film only after proceedings had been launched was found to be tuberculous and to have already infected one of his family. A second case who arranged a private X-ray after prosecution had been threatened was also found to have active disease. When these two instances are added to the observed figures (Table XXXVI) of greater incidence of active disease in persons who are X-rayed only after their failure to attend for X-ray has been questioned, compared with those who comply in the first instance, it is obvious that an element of compulsion is required if the surveys are to be fully successful.

DOMICILIARY VISITING

There is currently an increasing trend towards early discharge from hospital of cases under treatment. This means that, to an increasing extent, contact must be maintained between clinics and discharged patients, as the period of supervised drug taking, (in hospital) is diminished. It is becoming increasingly apparent that the future progress of a tuberculous individual depends largely on the regularity with which he takes drugs, to which the mycobacteria causing his disease are fully sensitive, while he is secreting organisms in his sputum. If this treatment is irregular for any reason—drug reaction, failure to co-operate or inadequate case supervision—the possibilities of future breakdown are increased. For this reason alone, closer supervision of out-patients is required now than formerly when they remained for much longer periods in hospital. This work falls largely on the visiting sisters who are responsible for maintaining liaison between the Clinic and the patient and his family. The usual routines of constant supervision, tuberculin testing and B.C.G. vaccination have been fully maintained this year. The visiting sisters now accompany Clinic doctors in their visits to country centres and by handling the distribution of sputum containers, performing tuberculin tests and general assistance the smooth working of the follow-up clinics has been much increased.

TUBERCULIN TESTING AND B.C.G. VACCINATION

(Tables XXXVIII, XXIX, XL, XLII, XLIII)

In last year's report mention was made of testing with human and avian PPD, supplied by courtesy of the Medical Research Council of Great Britain and the Ministry of Fisheries and Food Central Veterinary Laboratory, Weybridge. Following testing last year of school children, two further groups—definite cases of tuberculosis and cases believed to be infected with "atypical tuberculosis" have been tested and results are reported in Tables XLII and XLIII. The tuberculin used (4 T.U. Avian and 5 T.U. Human) was biologically standardised to give comparable reaction sizes. It will be seen that a marked difference occurs in the distribution of reactions; the tuberculosis cases showing predominantly larger reactions to human PPD, while the cases of "atypical" infection (almost all infected with Battey bacilli, an organism closely allied to *M. avium*) showed larger reactions to the avian tuberculin. Testing with these two tuberculins is therefore of some assistance in diagnosis. Exceptions, however, to the rule that the larger reaction signifies the infecting organism can be seen in the tables and so care in clinical interpretation is required. Most persons in this community sustain sub-clinical "atypical" infection and so subsequent true infection may fail to entirely alter the hypersensitivity pattern.

Routine tuberculin testing with a view to B.C.G. vaccination is now undertaken during the first year at secondary school. The grouping of children from primary to secondary schools has considerably reduced the number of schools to be visited which simplifies this work. The continued co-operation of school staff is gratefully acknowledged.

TUBERCULOSIS ALLOWANCES

(Table XLIV)

A progressive fall in the number of persons in receipt of tuberculosis allowances can be seen in reviewing this table. This represents a very considerable economy to the Commonwealth Government in its Tuberculosis Eradication Campaign. The number of persons in receipt of the allowance at any one time depends very largely upon the number currently being investigated in hospital, as possible cases of tuberculosis, who, following diagnosis, are found to have other chest conditions and so receive the allowance only for a few weeks.

TABLE XXVIII
SOURCE OF NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1966

Source	Pulmonary Cases		Non Pulmonary Cases		Total Cases
	Number	Percentage	Number	Percentage	
Mass Community Surveys	128	21·3	..	..	128
Private Medical Practitioners—					
(a) Direct	14	2·4	4	17·4	14
(b) Via Chest Clinic	7	1·2	4	17·4	11
General Hospitals	21	3·6	9	39·1	30
Chest Hospitals, Annexes and Sanatoria	251	41·8	6	26·1	257
Chest Clinics	132	22·0	..	..	132
Repatriation Clinics and Hospitals	26	4·3	..	..	26
Death Certificates	8	1·3	..	..	23
Special Groups—					
(a) Mental Hospital Surveys	13	2·1	..	..	13
(b) Gaol Surveys .. .. .	..	..	..	..	..
(c) Ante-Natal Hospitals .. .. .	..	..	..	..	..
(d) Other .. .. .	..	..	..	..	..
TOTALS	600	100·0	23	100·0	623
Less—Any transfers-in Included Above	16	2·7	..	..	16
Total Notifications	584*	97·3	23	100·0	607

* Includes 2 cases of Pulmonary and Non Pulmonary Tuberculosis.

TABLE XXIX
NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1966
NEW ACTIVE AND PROBABLY ACTIVE CASES
SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males				Females				Persons				Percentage of Each Age Group	
	Primary	Pleurisy with Effusion	Pulmonary			Non Pulmonary	Primary	Pleurisy with Effusion	Pulmonary			Non Pulmonary		Total Persons
			Minimal	Moderately Advanced	Advanced				Minimal	Moderately Advanced	Advanced			
0-4	3	..	..	..	..	1	..	..	..	..	4	9	1.5
5-9	1	..	1	..	..	1	..	..	..	..	..	3	0.5
10-14	..	..	3	..	..	..	..	..	..	..	..	2	0.3
15-19	..	..	..	..	..	..	..	..	..	..	..	14	2.4
20-24	..	..	2	..	..	..	..	..	..	..	2	10	1.6
25-29	..	..	10	..	..	..	..	..	..	..	3	35	5.9
30-34	..	..	8	..	..	..	..	..	..	..	1	31	5.3
35-39	..	1	14	..	..	..	..	1	..	..	1	39	6.6
40-44	..	1	20 (1)	..	..	..	..	1	..	..	1	44	7.5
45-49	..	..	20 (1)	..	..	..	..	..	..	..	1	52	8.8
50-54	..	..	29 (2)	..	..	..	..	..	..	..	1	61	10.4
55-59	..	..	20	..	..	..	..	..	..	..	..	57	9.7
60-64	..	..	20	..	..	..	..	..	..	..	2	67	11.4
65-69	..	..	22 (1)	..	..	..	..	..	..	..	3	58	9.8
70-74	..	..	17	..	..	..	..	..	..	..	1	50	8.5
75 and over	..	..	16	..	..	..	..	..	..	..	2	55	9.3
Not stated	..	..	23 (1)	..	..	..	..	..	..	..	..	3	0.5
Totals ..	4	2	206 (6)	183 (2)	25	1	..	94	49	3	23	590	100.0	

Total includes 2 cases of Pulmonary and Non Pulmonary tuberculosis.

Atypical cases in brackets.

TABLE XXX
RE-ACTIVATED CASES OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1966
SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males				Females				Persons				
	Min.	Mod. Adv.	Adv.	Non Pul-monary	Min.	Mod. Adv.	Adv.	Non Pul-monary	Min.	Mod. Adv.	Adv.	Non Pul-monary	Total Persons
0-4 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
5-9 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
10-14 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
15-19 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
20-24 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
25-29 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
30-34 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
35-39	1	..	..	..	..	..	..	..	1	..	..	..	1
40-44	1	..	..	..	..	..	..	..	1	..	..	..	1
45-49 .. ..	..	3	..	..	..	..	..	..	..	3	..	..	3
50-54 .. ..	..	1	..	..	..	..	..	..	..	1	..	..	1
55-59 .. ..	..	3	..	..	1	1	..	..	1	4	..	..	5
60-64 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
65-69 .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
70-74 .. ..	..	4	..	..	..	..	..	..	..	4	..	..	4
75 and over	1	..	1	..	..	..	..	..	1	..	1	..	2
Not Stated .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	3	11	1	..	1	1	..	..	4	12	1	..	17

TABLE XXXII
TUBERCULOSIS NOTIFICATIONS OF MIGRANTS—YEAR ENDED 30TH JUNE, 1966

Arrival in Australia	British		Non British	
	Total	Percentage of Total Notified Migrants	Total	Percentage of Total Notified Migrants
Within 1 year ..	7	5.9	8	6.7
Within 5 years ..	4	3.3	8	6.7
Within 10 years..	7	5.9	8	6.7
Over 10 years ..	39	32.7	38	32.1
Totals ..	57	47.8	62	52.2

Migrants (119) were 19.2 per cent. of all notified tuberculosis cases (621).

TABLE XXXI
NOTIFICATIONS DURING YEAR ENDED JUNE 30, 1966, SHOWING BACILLARY STATUS OF PATIENTS AT TIME OF NOTIFICATION

Age Group	Number of Patients Receiving Initial Treatment		Number of Retreatment Cases	
	Bacillary Positive	Bacillary Negative	Bacillary Positive	Bacillary Negative
0- 4 ..	2	7	..	..
5- 9 ..	2	1	..	..
10-14 ..	..	2	..	..
15-19 ..	5	9	..	..
20-24 ..	2	8	..	..
25-29 ..	21	14	..	..
30-34 ..	14	17	..	..
35-39 ..	25	14	1	..
40-44 ..	18	26	..	1
45-49 ..	30	22	2	1
50-54 ..	35	26	1	..
55-59 ..	36	21	4	1
60-64 ..	34	33	..	..
65-69 ..	37	21	..	..
70-74 ..	24	26	2	2
75- ..	34	21	2	..
Not Stated ..	2	1	..	..
Totals ..	321	269	12	5

TABLE XXXIII
NUMBER OF NEW CASES OF CARCINOMA OF THE LUNG SEEN AT THE CHEST CLINIC, BRISBANE

1st July, 1958 to 30th June, 1959	56
1st July, 1959 to 30th June, 1960	65
1st July, 1960 to 30th June, 1961	83
1st July, 1961 to 30th June, 1962	111
1st July, 1962 to 30th June, 1963	109
1st July, 1963 to 30th June, 1964	100
1st July, 1964 to 30th June, 1965	101
1st July, 1965 to 30th June, 1966	116

TABLE XXXIV
COMPULSORY MASS CHEST X-RAY SURVEY OF PERSONS OVER 14 YEARS OF AGE FROM 1ST JANUARY, 1965 TO 31ST DECEMBER, 1965

Locality	Estimated Number of Persons over 14 years of Age	Number of Micro Films Taken	Number of Active Cases Found	Number of Cases per 1,000 Micro Films Taken	Inactive Cases	Non-specific Fibrosis	Intercurrent or Pneumonic	Cardiac Abnormality	Carcinoma	Other Tumour	Pneumoconiosis	Bronchiectasis	Sarcoidosis	Other Disease	No Significant Abnormality After Investigation	Under Investigation	Old Cases Rediscovered
Rockhampton Division ..	61,526	61,232	27	0.4	429	361	20	133	16	4	14	37	2	118	726	..	3
Brisbane Division	131,699	123,818	28	0.3	197	178	35	192	15	11	5	54	4	70	1,879	400	361
Brisbane Metropolitan ..	169,223	157,138	94	0.6	1,322	655	63	288	30	22	22	72	13	195	2,644	386	475
Special Surveys	7,850	5,926	10	1.7	46	11	1	3	4	2	1	6	..	6	139	..	45
Thursday Island	6,444	6,342	26	4.1	111	7	9	21	1	1	..	10	..	12	41	15	2
Total	376,752	351,456	185	0.5	2,105	1,212	128	637	66	40	42	179	18	401	5,429	801	886

TABLE XXXV
MASS X-RAY SURVEY—QUEENSLAND—FOR YEAR ENDED 31ST DECEMBER, 1965

Age	Number X-Rayed	Active		Inactive		Suspected Active		Other Conditions	
		Number	Per 1,000 Examined	Number	Per 1,000 Examined	Number	Per 1,000 Examined	Number	Per 1,000 Examined
0-14	12,601	..	..	5	0.4	7	0.6	87	6.9
15-19	46,360	4	0.1	32	0.7	14	0.3	344	7.4
20-24	33,827	3	0.1	45	1.3	15	0.4	317	9.4
25-29	27,460	6	0.2	67	2.4	23	0.8	268	9.8
30-34	25,720	13	0.5	89	3.5	20	0.8	340	13.2
35-39	29,511	23	0.8	162	5.5	49	1.7	478	16.2
40-44	29,939	14	0.5	229	7.6	72	2.4	644	21.5
45-49	28,456	25	0.9	239	8.4	70	2.5	742	26.1
50-54	27,163	28	1.1	263	9.7	86	3.2	1,036	38.1
55-59	22,350	6	0.3	208	9.3	98	4.4	985	44.1
60-64	18,088	22	1.2	250	13.8	94	5.2	982	54.3
65-69	15,333	13	0.8	189	12.3	88	5.7	932	60.8
70-74	11,855	16	1.3	150	12.7	72	6.1	801	67.6
75 and over	13,300	11	0.8	161	12.1	88	6.6	1,009	75.9
Not Stated	3,567	1	0.3	16	4.5	5	1.4	73	20.5
TOTALS	345,530	185	0.5	2,105	6.1	801	2.3	9,038	26.2

TABLE XXXVI
COMPULSORY MASS CHEST X-RAY SURVEY FOR YEAR ENDED
31ST DECEMBER, 1965

Attended Following Electoral Check	Number of Persons X-Rayed	Number of Cases of Active Tuberculosis Discovered	Rate of Active Tuberculosis Per 1,000 Micro Films Taken
Metropolitan ..	2,611	6	2.3
Country ..	1,687	6	3.5
Total ..	4,298	12	2.8
Attended Within Specified Period ..	351,456	185	0.5

TABLE XXXVII
NUMBER OF X-RAY EXAMINATIONS CARRIED OUT—1ST JANUARY, 1965 TO 31ST DECEMBER, 1965

	Chest Clinic	Mobile Unit	Royal Brisbane Hospital	Princess Alexandra Hospital	Rockhamp- ton	Toowoomba	Cairns	Townsville	Thursday Island	Total
Micro films ..	29,036	345,530	7,269	17,501	2,316	4,833	1,965	1,700	..	410,150
Micro Re-Rays ..	9,122	2,693	367	126	200	120	..	107	..	12,735
Other large films	16,542	337	..	..	3,454	5,200	4,705	3,638	2,189	36,065
TOTALS ..	54,700	348,560	7,636	17,627	5,970	10,153	6,670	5,445	2,189	458,950

TABLE XXXVIII
TUBERCULIN TESTS AND B.C.G. VACCINATIONS FOR YEAR ENDED 30TH JUNE, 1966.

Locality	Number Tested	Did Not Return		Positive		Positive After Previous B.C.G.		Negative		B.C.G. Given		B.C.G. Not Given		B.C.G. Refused	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan	10,069	288	2.9	2,890	28.7	2,639	26.2	4,252	42.2	2,811	66.2	1,356	31.9	85	1.9
Metropolitan and Brisbane Division Schools	19,762	661	3.3	2,734	13.8	1,009	5.1	15,358	77.8	14,961	97.4	44	0.3	353	2.3
Country	8,191	335	4.1	3,103	37.9	2,287	27.9	2,466	30.1	1,590	64.5	862	34.9	14	0.6
Country Schools	24,476	749	3.1	4,563	18.6	3,241	13.2	15,923	65.1	6,050	37.9	9,767	61.4	106	0.7
TOTALS	62,498	2,033	3.3	13,290	21.3	9,176	14.6	37,999	60.8	25,412	66.9	12,029	31.6	558	1.5

TABLE XXXIX

TUBERCULIN TESTS AND B.C.G. VACCINATIONS OF MIGRANTS FOR YEAR ENDED 30TH JUNE, 1966.

Locality	Number Tuested	Did Not Return		Positive		Positive After Previous B.C.G.		Negative		B.C.G. Given		B.C.G. Not Given		B.C.G. Refused	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan	1,024	19	1.9	608	59.4	105	10.2	292	28.5	182	62.3	107	36.6	3	1.1
Metropolitan and Brisbane Divi- sion Schools	1,160	47	4.1	137	11.8	100	8.6	876	75.5	866	98.8	1	0.1	9	1.1
Country	298	25	8.4	204	68.5	20	6.7	49	16.4	16	32.7	33	67.3	..	..
Country Schools	875	25	2.9	214	24.6	100	11.3	536	61.2	141	26.3	394	73.5	1	0.2
Totals	3,357	116	3.5	1,163	34.6	325	9.8	1,753	52.1	1,205	68.7	535	30.5	13	0.8

TABLE XL

COMPLICATIONS FOLLOWING VACCINATIONS IN 3,095 PERSONS TESTED—YEAR ENDED 30TH JUNE, 1966

Age Group	Number Given B.C.G.	Local Ulcer		Enlarged Glands		Incised Glands		Total Complications	
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
0- 2 years	487	9	1.8	2	0.4	2	0.4	13	2.6
3-14 years	1,972	15	0.8	3	0.2	..	..	18	1.0
Over 14 years	636	21	3.3	..	..	..	..	21	3.3
Totals	3,095	45	1.5	5	0.2	2	0.06	52	1.7

TABLE XLI

NUMBER OF DEATHS FROM TUBERCULOSIS AND DEATH RATE (per 100,000 MEAN POPULATION), QUEENSLAND

Year	Deaths	Death Rate
1950	236	19.8
1951	226	18.4
1952	216	17.2
1953	162	12.6
1954	140	10.6
1955	137	10.2
1956	81	5.7
1957	92	6.6
1958	83	5.9
1959	78	5.4
1960	83	5.7
1961	72	4.7
1962	84	5.5
1963	80	5.1
1964	75	4.7
1965	42	2.6

TABLE XLIII

CORRELATION BETWEEN REACTION SIZES TO HUMAN AND AVIAN PPD. CASES OF INFECTION WITH ATYPICAL MYCOBACTERIA

		Avian PPD. (mm).					
		0	5	10	15	20	25+
Human PPD. (mm).	0	8	6	8	1	1	1
	5		2	7	2	2	
	10	2	1	1	8		
	15			3	4	3	2
	20		2	0	2	2	1
	25+					1	

TABLE XLII

CORRELATION BETWEEN REACTION SIZES TO HUMAN AND AVIAN PPD. CASES OF ADULT TUBERCULOSIS

		Avian PPD. (mm).					
		0	5	10	15	20	25+
Human PPD (mm).	0	4					
	5	2	2	4			
	10	8	5	8	5	1	3
	15	3	6	16	14	1	
	20			3	6	3	
	25+			2	1	2	

TABLE XLIV

NUMBER OF TUBERCULOSIS ALLOWANCES BEING PAID IN QUEENSLAND AT 30TH JUNE, 1966

	Male	Female	Total
Number accommodated in Tuberculosis Institutions ..	136	29	165
Number not so accommodated	150	41	191
Totals	286	70	356
Period in Receipt of Allowance	Male	Female	Total
Under 1 year	208	44	252
1-2 years	44	21	65
2-3 years	11	..	11
3 years and over	23	5	28
Totals	286	70	356

DIVISION OF INDUSTRIAL MEDICINE

Director of Industrial Medicine: E. M. RATHUS, M.B., Ch.B. (Cape Town)

Radiation Health Physicist: K. A. STEVENS, B.Sc. (Q'ld)

Inspector in Charge—Weil's Disease Control: D. KENNEDY, M.R. San. I.

Industrial Health Inspector: J. W. MULCAHY, A.R. San. I.

This Division provides a service for the investigation of occupational health hazards. The pattern of problems posed is protean and reflects the diversity of modern industry. The scientific resources of the Government Chemical Laboratory are relied on for detailed delineation of physical and chemical data and the Laboratory of Microbiology and Pathology for biochemical and related studies. The Chest Clinic co-operates in X-ray surveys of men in dusty occupations, and a close liaison is maintained with the Department of Labour and Industry.

Routine Inspections

During the year 200 inspections were carried out covering 36 separate industries (noise surveys excluded).

Noise

Noise problems were investigated at 27 factory premises, and several quite intense noise sources carrying a hearing damage potential were discovered. Advice on hearing protection was given to the relevant firms and the division was able to accomplish nine complete surveys comprising a detailed study of sound pressure levels at their source. These were followed by audiometric examinations of workers in these industries and a total of 266 workers were so examined. The expected pattern of hearing damage was detected in a proportion of workers exposed constantly over many years to noise levels ranging from 105 to 126 decibels. Experience has shown that there are very large problems in engineering and design to isolate, or insulate against, industrial noise and personal protection of exposed workers is often the only practical approach.

Lead Industry

Two major lead hazards were investigated. One consisted in the breaking up of a navy frigate for scrap and the expected high concentrations of lead in air were found during flame cutting of the metal plates liberally and carefully lead-painted through the years.

Another interesting lead hazard was the use of basic lead carbonate as a heat stabiliser in the manufacture of polyvinyl roofing material and other products. The concentrations of lead dust in the air were quite alarming and reflected in the usual routine tests of the workmen.

In the case of the ship constant supervision was instituted and in the plastics industry careful engineering design and a change to a less toxic compound has maintained the hazard within reasonable bounds.

An almost perfect design for the protection of workmen engaged in mechanical buffing of motor car bodies in an assembly plant was investigated and concentrations found to be well below the allowable limits.

Organic Phosphates

A large survey was undertaken in a citrus growing area north of Brisbane where large quantities of organic phosphates are used. Parathion is extensively employed together with lesser toxic organic phosphates. The area has been previously indoctrinated and protective clothing is worn quite extensively. This area has produced some cases of moderate to symptomatic absorption of parathion and a survey enabled this Division to address the farmers on the problems of handling these materials. The accessibility of farm poisons to children was very evident and constant watchfulness is the price of safety.

Hydrogen Sulphide

An extremely interesting problem in the generation of hydrogen sulphide in coal mines underground was undertaken at the request of the Department of Mines, the Mining company and the union concerned. Mechanical mining had caused high concentrations of hydrogen sulphide to be released into the working areas and "gas eye" had occurred with troublesome frequency. A very detailed examination was made of the problem and consultation between this Division

and its scientific group and officers of the Mines Department and engineers of the mining company enabled practical methods for increasing mine ventilation and for rapid assessment of the problem during mine shifts to be implemented.

General

Minor problems are very often more troublesome than specific hazards, well exemplified by recurring irritation both physical and mental in a group of men employed in laying very large amounts of fibreglass as insulating material for a large facility. In this type of situation reassurance of the minor nature of the problem understandably does not always satisfy workmen but all effort was directed towards suggesting the proper type of clothing and methods for minimising fixation of the foreign bodies to skin creases and body prominences.

A most interesting outbreak of furunculosis occurred on a large building site and was obviously spread by contact between a group of closely associated men. The provision of antiseptics for washing and treatment of men affected seemed to break the sequence but the problem was a most interesting miniature study in epidemiology.

The waterfront produced few problems but the bulk loading of barley did cause some concern. Investigations suggested that good dust masks should be adequate as dust counts were minimal. However it appears that in the rather hot summer months in Brisbane waterside workers certainly prefer air-supply outfits and it would appear now to be the accepted garb for the handling of dusty cargoes. Possibly the scientific approach does not always uncover the absolute values.

A fatal case of carbon tetrachloride (CCl_4) poisoning was investigated. This occurred in a man using this chemical as a dry-cleaning agent in a small single room. The story was quite typical and unfortunately he died with renal failure. It was established that 15 days after the exposure it was possible to detect 2×10^{-6} p.p.m. of CCl_4 in the exhaled breath of the patient. The identification of certain volatile solvents and other materials in exhaled breath has quite obvious and important applications.

A rather typical case of chromate dermatitis occurred in printing workers and suggestions were made to avoid contact with this troublesome material.

Boards, &c.

Official attendance was required at meetings of the Occupational Health Committee of the National Health and Medical Research Council, the Health, Welfare and Safety Board of the Department of Labour and Industry, the Chest Board of the State Government Insurance Office and the Radiological Advisory Council of the Department of Health.

During the year, Dr. Rathus presented a paper on "A Clinical Diagnosis of Lead Poisoning" at a conference held under the auspices of Broken Hill Associated Smelters in Melbourne.

Radiation Health Physics Section

With the occupation of laboratories in the new Health and Welfare Building and the commissioning of the Multi-Channel Pulse Height Analyser this section is now equipped to handle all radiation health problems that could present in Queensland as a result of the use of ionising radiation in medicine, research and industry.

(a) Licenses and Registration

The number of licenses at present in force for the use of radioactive substances and irradiating apparatus is 154, an increase of 32 over the previous year. Such licenses are granted on the recommendation of the Radiological Advisory Council.

Four hundred and twenty-six certificates of registration of irradiating apparatus have been issued this year compared with 272 in 1964-65.

(b) *Film Badge Service*

This service continues to grow and at the present time it covers 1,094 people in 181 centres throughout Queensland, New Guinea and Papua. The number of films processed and assessed during 1965-66 has risen by 20 per cent. over the number processed in 1964-65.

(c) *Multi-Channel Pulse Height Analyser*

This unit is now adequately housed in the Health Physics Laboratory in the Health and Welfare Building. It has been invaluable in identifying unknown radioactive contaminants as well as solving some difficult problems in industry. Work for this unit will grow with the more general awareness of its capabilities.

(d) *Routine Inspections*

The Radiation Health Physicist has made inspections of most of the major users of radioactive substances. Continued surveillance of industrial radiography has ensured improved methods and techniques in an expanding industry.

Visits to country hospitals have proved worthwhile and this will be expanded in the coming year.

All new plans for housing of radiation equipment in Public Hospitals have been checked to ensure the adequacy of layout and protective barriers provided.

(e) *National Health and Medical Research Council*

At the invitation of the Radiation Technical Sub-Committee of the National Health and Medical Research Council, the Radiation Health Physicist in conjunction with the Director of Industrial Medicine, prepared a code of practice for the use of ionised radiation in schools which has since been published.

The Radiation Health Physicist has been appointed to the Radiation Technical Sub-Committee of the National Health and Medical Research Council.

Weil's Disease Campaign

The activities of the section remained unchanged with inspections of canefields during the harvesting season (July to December), and for hazardous field health conditions during the "slack" season (January to June) for the implementation of rodent control measures. In addition attention

to farm and barrack sanitation was undertaken. Activities were concentrated chiefly in areas within the heavy rainfall belt, Tully to Gordonvale, with visits to outlying areas as considered necessary.

A considerable increase in the number of mechanical harvesting machines is recorded, 338 as against 217 in 1964 and a drop in the number of manual cutters signed on from 2,911 to 2,012.

There was a distinct increase in rat infestation and health burn orders increased accordingly, almost double the amount for 1964 being issued. Heavy rat damage was caused by both common species found in canefields. In spite of unfavourable wet field conditions and increased rat activity cases of leptospirosis were again lower than expected.

Thallium wheat bait remains the most popular choice for general use with "Warfarin" and Phosphorus on bread being used for special purposes and in chosen localities.

The Bureau of Sugar Experiment Stations have appointed a zoologist, stationed at Gordonvale, on full time rat studies in northern cane areas and it is hoped that subsequent findings will benefit the industry both economically and from the point of view of Weil's disease control.

A summary of occupational fever cases reported appears below with all ages and sexes represented. Figures in parentheses show the corresponding incidence for the previous year.

OCCUPATIONAL FEVERS

District	Lepto- spirosis	Scrub Typhus	Q. Fever	Brucellosis
Babinda ..	3 (12)	2 (0)	1 (1)	0 (0)
Innisfail ..	11 (21)	0 (0)	2 (1)	0 (0)
Tully ..	1 (0)	0 (1)	0 (3)	0 (0)
Cairns (including Gordonvale) ..	13 (6)	1 (0)	10 (9)	2 (0)
Mossman ..	7 (4)	1 (2)	0 (0)	0 (0)
Totals ..	35 (43)	4 (3)	13 (14)	2 (0)

DIVISION OF MATERNAL AND CHILD WELFARE

Director: H. C. MURPHY, M.B., B.S.

Deputy Director: J. McFARLANE, M.B., B.S.

Medical Officer: J. J. B. REFSHAUGE, O.B.E., M.B., B.S., M.Sc., Dip. Ed. D.P.H.

Medical Officer (Part-time): M. F. NASSER, M.B., B.S., M.R.C.P.

Superintendent: M. F. NIXON, S.R.N., F.C.N.A.

Deputy Superintendent: A. P. HERTWECK, S.R.N.

The year 1965 was marked by the lowest infant mortality rate ever recorded in Queensland, namely 17.80 deaths per thousand live births. The maternal mortality rate was slightly higher than in 1964 being 0.30 deaths per thousand live births. The same number of deaths occurred but the actual births were lower in 1965 than in 1964, and this would account for the difference in the rates.

Many factors are responsible for this satisfactory state of affairs, none of the least of which as was pointed out in last year's report is the increasingly improved standard of obstetric care.

Most noticeable in the reduction in infant mortality is the reduction in deaths due to prematurity. In 1956 the figure was 188 whilst in 1965 it was 100, being almost halved in 10 years.

This trend is not confined to Queensland alone but is noticeable in other States and overseas. Comparative figures for infant mortality rates for the years 1953 and 1963 in Australia and overseas are as follows:—

TABLE XLV
SHOWING INFANT MORTALITY RATES FOR VARIOUS COUNTRIES
FOR THE YEARS 1953 AND 1963

	1953	1963
Sweden	18.7	15.0
Netherlands	22.0	15.8
Norway	22.0	17.7
New Zealand	25.7	17.8
Finland	34.2	18.0
Australia	23.3	19.5
England and Wales	26.8	21.1
Switzerland	29.8	21.2
United States	27.8	21.2
Japan	48.9	23.2
France	41.9	25.5
West Germany	46.4	27.0
East Germany	53.5	31.1

Whilst the continued reduction in infant mortality is gratifying, the position with regard to the birth rate in Queensland is far from satisfactory. In 1961, the number of marriages was 10,390, the number of births 36,637 and the birth rate was 24.2 per thousand of the mean population. In 1965 the number of marriages was 12,967 but the number of births was 33,551 and the birth rate 20.9.

Obviously there is no room for complacency with regard to the vital statistics picture in Queensland.

A survey of developmental milestones was carried out during the year, and whilst there were the usual variations that one would expect in a survey of this nature, the average ages corresponded fairly closely with those quoted in most text books. No difference was noted in tropical as compared with sub-tropical areas.

The average ages were: smiling at 6 weeks, sitting without support at 28 weeks, crawling at 36 weeks and speaking at 38 weeks.

A birth survey carried out in all public hospitals throughout the State from February to July, 1965, inclusive, revealed the increasingly high standard of obstetrical and paediatric care which is responsible for the low infant and maternal mortality rates.

Interesting facts emerging from this survey include the incidence of prematurity. Out of 16,401 live births 5.4 per cent. were premature and this would be among the lowest figures recorded for prematurity; the usual figures quoted varying from 5 per cent. to 12 per cent. of live births.

Still births in this survey amounted to 178 with a rate of 10.7 whilst neo-natal deaths under 14 days accounted for 181 with a rate of 11.0.

The perinatal mortality rates for Queensland for the years 1964 and 1965 were 24.8 and 23.9 per thousand total live births (that is the sum of live and still births). Up to the present, perinatal deaths in Queensland include all deaths from the 28th week of gestation to the 28th day after birth, and most other Australian States still adopt this standard.

The World Health Organization has recommended that perinatal deaths should include all deaths from the 20th week of gestation (or 400 grammes weight) to the 28th day after birth. The 59th Session of the National Health and Medical Research Council of May, 1965, supported this recommendation, and it is to be hoped that legislation will soon be introduced into Australian States so that comparative studies can be accurately undertaken.

The position at present with regard to perinatal mortality is very confused; the standard varying from country to country and only a uniform definition can be of any value in the compilation of statistics.

EXTENSIONS OF THE SERVICE

There are now 270 centres throughout the State, 82 being in the metropolitan area, and 188 being in country districts.

New Centres were opened at Jandowae, Augathella, Mirani, Slade Point, Prairie, Injune and Tambo. Chinchilla became a main centre and Tara, Muttaborra and Halifax were re-opened.

On May 12th, 1966, a new building was opened by the Honourable the Minister for Health at Rockhampton. A new building was also completed at Charleville.

The sub-centre at Archerfield Road, Inala, was closed when the accommodation ceased to be available.

New resident centres will be completed during the coming year in Southport and Murgon.

The mobile clinic continues to serve a very useful purpose in visiting areas where either transport or accommodation, or both, is not available. Areas visited are Strathpine, Lawnton, Albany Creek, Capalaba, Tingalpa, Arana Hills, Bunyaville, Ferny Grove, Deception Bay, Moggill, Blunder Road, Inala, and Bribie Island.

Lessons in mothercraft were given at 157 Schools throughout the State, the total attendance being 11,665.

TABLE XLVI

ATTENDANCES OF INFANTS AND CHILDREN AT MATERNAL AND CHILD WELFARE CENTRES AND SUB-CENTRES

Metropolitan

	1963-64	1964-65	1965-66
Chermside and Sub-Centres ..	7,969	11,028	11,955
Children's Hospital Clinic ..	5	417	348
Fortitude Valley and Sub-Centres ..	22,875	21,727	21,035
Herschell Street and Sub-Centres ..	18,186	19,253	18,399
Inala and Sub-Centres ..	10,528	9,203	10,381
Margate and Sub-Centres (from 28-6-65) ..	..	..	5,922
Mobile Clinic ..	1,954	6,273	6,776
Moorooka and Sub-Centres ..	12,183	10,432	10,231
Mount Gravatt and Sub-Centres ..	11,361	14,429	16,440
Nundah and Sub-Centres ..	10,742	11,306	11,219
Paddington and Sub-Centres ..	13,271	12,267	10,674
Sandgate and Sub-Centres ..	12,919	13,396	8,882
West End and Sub-Centres ..	8,095	8,207	9,560
Wooloongabba and Sub-Centres ..	23,440	25,954	23,968
Wynnum and Sub-Centres ..	12,302	11,893	11,020
Total Metropolitan ..	165,830	175,785	176,810

Country

Atherton and Sub-Centres ..	4,121	3,438	3,130
Ayr and Sub-Centres ..	7,128	7,072	7,706
Barcaldine and Sub-Centres ..	2,265	1,491	1,446
Biloela and Sub-Centres ..	6,290	4,874	5,353
Bowen and Sub-Centres ..	5,478	5,094	5,403
Bundaberg and Sub-Centres ..	11,450	11,559	11,006
Cairns and Sub-Centres ..	18,410	18,548	18,145
Charleville and Sub-Centres ..	3,450	2,596	3,126
Charters Towers and Sub-Centres ..	2,904	3,088	3,431
Chinchilla and Sub-Centres (from 2-8-65) ..	..	..	2,779
Dalby and Sub-Centres ..	5,011	5,193	3,160
Emerald and Sub-Centres ..	4,044	3,797	3,434
Gayndah and Sub-Centres ..	5,844	5,800	5,063
Gladstone and Sub-Centres ..	4,145	3,981	4,109
Goondiwindi and Sub-Centres ..	5,858	6,085	5,253
Gympie and Sub-Centres ..	10,248	9,589	9,141
Ingham and Sub-Centres ..	5,613	5,801	5,572
Innisfail and Sub-Centres ..	9,244	8,705	8,438
Ipswich and Sub-Centres ..	19,001	18,052	17,673
Kingaroy and Sub-Centres ..	2,912	2,911	3,093
Longreach and Sub-Centres ..	3,822	3,504	3,620
Mackay and Sub-Centres ..	18,575	18,107	18,394
Mareeba and Sub-Centres ..	6,422	6,408	6,175
Maryborough and Sub-Centres ..	9,684	10,154	9,210
Mount Isa and Sub-Centres ..	7,118	7,520	7,038
Murgon and Sub-Centres ..	4,060	3,207	3,161
Nambour and Sub-Centres ..	6,285	6,638	6,769
Railway Car Sub-Centres ..	2,840	4,209	3,500
Rockhampton and Sub-Centres ..	18,823	16,820	17,291
Roma and Sub-Centres ..	4,792	5,179	5,160
Southport and Sub-Centres ..	8,930	9,287	10,764
Toowoomba and Sub-Centres ..	10,782	11,390	13,846
Townsville and Sub-Centres ..	18,885	19,946	21,477
Warwick and Sub-Centres ..	5,087	5,656	6,892
Social Welfare Services ..	4,946	5,207	4,763
Total Country ..	264,467	260,906	264,521
Metropolitan ..	165,830	175,785	176,810
Country ..	264,467	260,906	264,521
Grand Total ..	430,297	436,691	441,331

VITAL STATISTICS

Births registered in Queensland during 1965 numbered 33,551, compared with 35,934 and 34,972 in 1963 and 1964 respectively. The birth rate per 1,000 mean population was 20.9, compared with 23.0 and 22.1 in 1963 and 1964, and was the lowest since 1942 when it was 20.4. Since 1961 all States have experienced falls in the birth rate and in the period 1961 to 1965 the rate for Australia as a whole fell from 22.9 to 19.6, or by 14.4 per cent., while the rate for Queensland fell from 24.2 to 20.9, or by 13.6 per cent.

Of the births registered during 1965, 17,250 were males and 16,301 were females, equivalent to 105.8 males for every 100 females.

MARRIAGES

Registration of marriages in 1964 numbered 12,967 giving a marriage rate of 8.1 per 1,000 mean population, compared with 7.4 in the previous year. Minors married numbered 8,133, comprising 2,150 males and 5,983 females.

INFANTILE MORTALITY

Deaths of infants aged under one year numbered 598 comprising 326 males and 272 females, compared with 673 in 1964. The infant mortality rate was 17.8 deaths per thousand live births, the lowest ever recorded.

The rates for the different parts of the State were metropolitan 14.9, other sub-tropical areas 18.5, and tropical areas 21.4 per 1,000 live births.

The total number of deaths due to prematurity (unqualified) was 100 compared with 129 in 1964. Deaths from prematurity since 1956 were as follows:—

1956 ..	188
1957 ..	163
1958 ..	139
1959 ..	118
1960 ..	140
1961 ..	141
1962 ..	131
1963 ..	144
1964 ..	129
1965 ..	100

All areas recorded fewer deaths from immaturity (unqualified), the numbers of deaths in the metropolitan, other sub-tropical and tropical areas being 6, 8, and 15 respectively, less than 1964.

Deaths of children aged one year and under five years

(a) Deaths of children aged one year and under two years during the year 1965 numbered 63, representing a death rate of 1.8 per 1,000 children in that age group. There were 70 deaths in 1964.

The chief causes of death were—

Accidents ..	14
Gastro-enteritis ..	12
Pneumonia—	
Lobar pneumonia ..	5
Bronchopneumonia ..	2
Other types ..	4
Congenital malformations ..	9
Leukaemia and Aleukaemia ..	3

Of the 14 deaths (9 males and 5 females) due to accidents, 4 were caused by accidental falls, 2 by accidental poisoning, 2 by drowning and 1 by a motor vehicle accident.

(b) The deaths of children aged two years and under five years during the year numbered 95, representing a death rate of approximately 0.9 per 1,000 children in that age group. Deaths in 1964 were 73.

The chief causes of deaths were—

Accidents ..	41
Pneumonia (all kinds) ..	11
Malignant neoplasms ..	8
Leukaemia and Aleukaemia ..	7
Congenital malformations ..	5
Bronchitis ..	2
Cerebral spastic infantile paralysis ..	2
Gastro-enteritis ..	3

Of the 41 deaths due to accidents, 14 were caused by motor vehicle accidents, 12 by drowning, 4 by fire and explosion of combustible material, and 2 by accidental mechanical suffocation.

ANTE-NATAL SECTION

One thousand one hundred and twenty-five new patients attended the ante-natal clinics. A new centre was opened at Chermside on 1st December, 1965.

Seven hundred and sixty-three Papanicolau smears were taken, with one only showing conclusive morphology of malignancy.

The quarterly films shown at the Valley clinic continue to be well attended and the last attendance at one of these showings was over 90.

TABLE XLVII

SHOWING NUMBER OF MATERNAL AND INFANT DEATHS IN QUEENSLAND SINCE 1961

Year	Maternal Deaths	Infant Deaths (Birth Injury and Still Births)
1961	28	653
1962	23	609
1963	9	565
1964	10	486
1965	10	459

TABLE XLVIII
SUMMARY OF ANTE-NATAL PATIENT

	New Patients	Subsequent Visits	Post-Natal Examination	Total
Caboolture ..	28	215	58	301
Fortitude Valley	217	1,897	145	2,259
Woolloongabba	296	2,461	203	2,960
Inala	320	2,655	302	3,277
Moorooka ..	170	1,075	94	1,339
Chermside ..	94	576	23	693
Total ..	1,125	8,879	825	10,829

PAPANICOLAU SMEARS			
Caboolture ..	..	30	
Fortitude Valley ..	..	179	
Woolloongabba ..	..	263	
Inala .. ..	..	291	
Total .. ..	..	763	

Atypical cells	Woolloongabba	10
	Inala	5
Cells suspected of being malignant ..	Woolloongabba	3
	Inala	1
Conclusive morphology of malignancy	Woolloongabba	1

ANTE-NATAL SECTION

Talks to Mothers for Woolloongabba, Valley and Inala cases	875
Relaxing exercises Inala cases	95
Attendances at film at Fortitude Valley 2-9-65; 2-12-65; 3-3-66; 2-6-66	287
Visits to patients at Mater Mother's weekly from 2-7-65-24-6-66	4,075
Circular letters forwarded to Expectant Mothers (No. 1)	5,786
Circular letters forwarded to Expectant Mothers; re "The Expectant Mother" Book (No. 2)	1,859
Response to Circular letters	1,842
Serial letters sent to Expectant Mothers	14,463
Letters received from Expectant Mothers	707
Special letter of advice sent on request	543
Copies of "The Expectant Mother" Book sent on request	1,984
Requests from country centres and hospitals for "The Expectant Mother" Book	913
Copies of "Before and After—the Facts and Functions of Child Birth" sent on request	2,110
Requests from country centres and hospitals for copies of "Before and After—the Facts and Functions of Child Birth"	950
Copies of Baby Patterns sent	79
Copies of Maternity Belt patterns sent	4

TABLE XLIX

SHOWING COMPARISON OF MATERNAL MORTALITY, QUEENSLAND AND AUSTRALIA

Year			Maternal Deaths		Maternal Mortality Rate*	
			Queensland	Australia	Queensland	Australia
1911			98	615	5.77	5.03
1921			108	643	5.31	4.72
1931			108	650	6.06	5.48
1941			92	490	4.28	3.64
1951			35	203	1.18	1.05
1956			29	119	0.89	0.56
1957			21	138	0.62	0.63
1958			16	111	0.47	0.50
1959			21	104	0.59	0.46
1960			24	121	0.68	0.53
1961			28	107	0.76	0.44
1962			23	85	0.64	0.33
1963			9	64	0.25	0.27
1964			10	75	0.29	0.33
1965			10	..	0.30	..

* Per 1,000 live births

MATERNAL MORTALITY

The maternal mortality rate was 0.30 per 1,000 live births. Ten deaths were caused by diseases and accidents of pregnancy and childbirth. Of these, 7 were due to complications of childbirth and 2 to diseases and accidents of pregnancy (excluding 1 abortion). The causes of the 7 deaths due to diseases and accidents of childbirth were as follows:—

Ante-Partum Haemorrhage	1
Post-Partum Haemorrhage	1
Placenta Praevia Accreta	1
Auricular and Pulmonary Thrombosis	1
Pulmonary Thrombosis	1
Spinal Cord Thrombosis	1
Forceps Delivery for Delayed second stage labour	1

The cause of the 2 deaths due to diseases and accidents of pregnancy were as follows:—

Ruptured Ectopic Pregnancy	1
Infections of genito-urinary tract during pregnancy	1

TABLE L
CAUSES OF DEATHS IN INFANTS UNDER ONE YEAR—QUEENSLAND, 1965

Cause	1964	1965				Increase or Decrease
		Metro-politan	Sub-Tropical (a)	Tropical	Total	
Immaturity (unqualified)	129	27	43	30	100	} —32
Immaturity with mention of any other subsidiary condition ..	4	..	..	1	1	
Congenital Malformations	141	54	36	33	123	—18
Post-natal Asphyxia and Atelectasis	57	21	19	24	64	+ 7
Intracranial and Spinal injury at birth	44	11	16	12	39	— 5
Other birth injury	40	5	13	11	29	—11
Haemolytic disease of newborn (Erythroblastosis)	14	3	5	3	11	— 3
Pneumonia of newborn	14	5	7	6	18	+ 4
Haemorrhagic disease of newborn	9	2	3	..	5	— 4
Neo-natal disorders arising from Maternal Toxaemia	9	..	5	5	10	+ 1
Diarrhoea of newborn	3	..	1	1	2	— 1
Other diseases peculiar to early infancy	56	30	13	8	51	— 5
Total of diseases peculiar to early infancy	520	158	161	134	453	—67
Bronchopneumonia, other and unspecified Pneumonia	50	10	19	9	38	—12
Gastro-enteritis and Colitis	11	3	10	8	21	+10
Lobar Pneumonia	6	..	..	3	3	— 3
Diseases of Pancreas	4	1	1	1	3	— 1
Meningitis except Meningococcal and Tuberculous	5	3	1	2	6	+ 1
Accidents, Poisonings, and Violence	16	4	14	6	24	+ 8
All other causes	61	18	14	18	50	—11
Total deaths under 1 year	673	197	220	181	598	—75

(a) Excluding Metropolitan.

TABLE LI
CAUSES OF DEATHS IN INFANTS UNDER ONE MONTH OF AGE—QUEENSLAND, 1965

Cause	1964	1965				Increase or Decrease
		Metro- politan	Sub- Tropical (a)	Tropical	Total	
Immaturity (unqualified)	128	27	43	29	99	} -32
Immaturity with mention of any other subsidiary condition ..	4	..	..	1	1	
Congenital malformations	87	28	23	23	74	-13
Post-natal Asphyxia and Atelectasis	56	21	19	24	64	+ 8
Intracranial and Spinal injury at birth	44	11	16	12	39	- 5
Other birth injury	40	5	13	11	29	-11
Haemolytic diseases of newborn (Erythroblastosis)	14	3	5	3	11	- 3
Pneumonia of newborn	14	5	7	6	18	+ 4
Haemorrhage disease of newborn	9	2	3	..	5	- 4
Neo-natal disorders arising from Maternal Toxaemia	9	..	5	5	10	+ 1
Diarrhoea of newborn	3	..	1	1	2	- 1
Other diseases peculiar to early infancy	53	29	13	8	50	- 3
Total diseases peculiar to early infancy	461	131	148	123	402	-59
All other causes	12	3	7	9	19	+ 7
Totals	473	134	155	132	421	-52

(a) Excluding Metropolitan.

TABLE LII
CAUSES OF DEATHS IN INFANTS MORE THAN ONE MONTH, BUT LESS THAN TWELVE MONTHS OF AGE—QUEENSLAND, 1965

Cause	1964	1965				Increase or Decrease
		Metro- politan	Sub- Tropical (a)	Tropical	Total	
Immaturity (unqualified)	1	..	..	1	1	} ..
Immaturity with mention of any other subsidiary condition ..	..	..	..	..	..
Congenital Malformations	54	26	13	10	49	- 5
Post-natal Asphyxia and Atelectasis	1	..	..	..	..	- 1
Other diseases peculiar to early infancy	3	1	..	..	1	- 2
Total of diseases peculiar to early infancy	59	27	13	11	51	- 8
Bronchopneumonia, other and unspecified Pneumonia ..	50	10	19	9	38	-12
Gastro-enteritis	11	3	10	8	21	+10
Lobar Pneumonia	6	..	..	3	3	- 1
Diseases of Pancreas	3	1	..	1	2	- 3
Meningitis, except Meningococcal and Tuberculous	4	3	1	2	6	+ 2
Accidents, Poisonings, and Violence	15	4	10	3	17	+ 2
All other causes	52	15	12	12	39	-13
Total deaths 4 weeks and under 1 year.. .. .	200	63	65	49	177	-23

(a) Excluding Metropolitan.

TABLE LIII
DEATHS OF INFANTS UNDER ONE YEAR OF AGE FROM CONGENITAL MALFORMATIONS*

Congenital Malformations	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Monstrosity	11	7	8	6	8	4	6	10	9	3
Spina bifida and meningocele	14	17	10	18	20	16	14	19	13	12
Congenital hydrocephalus	13	11	14	12	8	16	15	5	4	9
Nervous system	3	3	5	2	5	5	..	5	5	2
Circulatory system	47	59	47	73	72	77	56	59	66	57
Cleft palate and harelip	2	1	2	2	..	2	1	1	..	..
Digestive system	25	26	16	18	16	11	17	10	18	17
Genito-urinary system	7	2	3	6	9	7	4	7	6	6
Bone and joint	1	..	2	3	1	2	..	4	2	2
Unspecified	12	6	6	15	12	9	17	12	18	15
Totals	135	132	113	155	151	149	130	132	141	123
Congenital malformations as a percentage of total infant deaths under one year of age	18.3	18.0	17.2	21.5	20.4	20.3	17.2	18.3	21.0	20.6

*Excluding congenital mental deficiency, hernia, mucoviscidosis.

TABLE LIV
CAUSES OF DEATHS OF PREMATURE (IMMATURE) INFANTS

	1963	1964	1965
Immaturity unqualified	144	129	100
Ill-defined diseases peculiar to early infancy, with immaturity	60	46	44
Post-natal Asphyxia and Atelectasis, with immaturity	38	32	32
Intracranial and Spinal injury at birth, with immaturity	13	15	11
Other birth injury, with immaturity	28	31	20
Neo-natal disorders arising from Maternal Toxaemia, with immaturity	5	8	6
Pneumonia of newborn, with immaturity	6	5	1
Haemorrhagic diseases of newborn, with immaturity	2	1	..
Haemolytic disease of newborn, with immaturity	8	5	5
Nutritional Maladjustment, with immaturity	1	..	..
Immaturity with mention of any other subsidiary condition	3	4	1
Umbilical Sepsis, with immaturity	1	..	1
Other Sepsis of newborn, with immaturity	3	..	..
Diarrhoea of the newborn, with immaturity	1	1	1
Totals	313	277	222
Total under one year, with immaturity	313	277	222
Total under one month, with immaturity	308	276	221

TABLE LV
ACCIDENTAL DEATHS OF CHILDREN (AGED 1 AND UNDER 15 YEARS)

	1960		1961		1962		1963		1964		1965		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Road Accidents	17	13	16	19	26	12	25	10	23	16	35	14	226
Firearms	2	1	1	..	4	3	2	1	5	2	5	..	26
Drowning	11	6	18	3	13	4	19	5	23	10	19	4	135
Falls	2	1	..	..	3	..	..	2	1	1	4	1	15
Other Accidents	19	22	31	4	27	14	26	11	17	9	24	12	216
	51	43	66	26	73	33	72	29	69	38	87	31	618
Totals	94		92		106		101		107		118		618

Accidental deaths of children in this age group numbered 118 in 1965 compared with 107 in 1964 and an average of 100 in the ten years 1956 to 1965 inclusive. The total deaths of children in this age group from all causes were 290 of which 41.0 per cent. were caused by accident.

TABLE LVI
MOTHERCRAFT HOMES

	Admissions		Daily Average	
	Mothers	Babies	Mothers	Babies
St. Paul's Terrace	79	248	2.65	13.7
Clayfield	56	205	2.13	11.75
Ipswich	78	151	2.6	7.7
Rockhampton	44	152	1.3	9.9
Toowoomba	36	127	1.28	9.09

SANDGATE HOME

One thousand one hundred and eighty-seven children were admitted to this Home during the year.

The problem of caring for children of mothers who are suffering from nervous disorders is becoming difficult owing to the length of time these children have to remain in the Home. There were 178 children from 67 families admitted owing to the mother's nervous condition. This accounted for 24 per cent. of the total families, and the average duration of stay in the Home was five weeks instead of the usual two weeks.

DIRECTOR'S CONSULTANT CENTRE

Number of children and babies whose mother received advice	1,458
Number examined for admission to Sandgate Home	1,266
Number advised by telephone	2,592
Total	5,316

TABLE LVII
SOCIAL SERVICE SECTION

	1964-65	1965-66
Social Service Visits	5,207	4,763
Number of newborns visited in Home	626	674
Number of newborns visited in Brisbane Women's Hospital, St. Andrew's, Corinda Maternity and Boothville	8,733	8,587
Number of test feeds given	57	43

The following are the titles of the articles of topical interest which have been forwarded each month to 60 newspapers throughout the State:—

- The Simple Orange
- Thumb Sucking
- Bed Wetting
- Should We Discipline Our Children?
- Safe Swimming
- Backing Out The Family Car
- Warning Children About Strangers
- Windburn
- Beating Jealousy
- Teaching Toddlers Tidiness
- Never Ignore A Squint
- Beating Toothache

TABLE LVIII
ANALYSIS OF NEW PATIENTS SEEN AT THE CENTRES

	1963-64	1964-65	1965-66
Infants—			
Under one year	22,856	22,765	23,060
One to two years	6,313	6,562	6,596
Over two years	2,307	2,182	2,111
Totals	31,476	31,509	31,767
Expectant mothers	1,568	1,894	2,464
Total new cases ..	33,044	33,403	34,231

TABLE LIX
VISITS TO NEWBORNS, SUBSEQUENT AND TOTAL VISITS

Year	Visits to Newborns	Subsequent and other Visits	Total Visits
1963-64	29,444	1,935	31,379
1964-65	28,803	1,828	30,631
1965-66	28,757	1,265	30,022

TABLE LX
TOTAL ATTENDANCES OF INFANTS AND CHILDREN AND EXPECTANT MOTHERS AT CENTRES

1963-64	1964-65	1965-66
444,372	451,951	457,956

DIVISION OF SCHOOL HEALTH SERVICES

Chief Medical Officer: G. M. S. MAY, M.B., B.S. (Melb.)

Medical Officer: V. M. O'HARA, M.B., B.S. (Syd.)

Chief Dental Officer: T. D. PUGH, L.D.S. (Eng.), L.D.Q.

GENERAL OUTLINE OF THE YEAR'S ACTIVITIES

The work carried out by Medical Officers and Sisters during the past year falls into three major categories—examinations of children, hygiene inspections of schools, and health education. School Dental Officers continue to give dental treatment to children in areas remote from established dental facilities. The great increase in teacher trainee examinations has become a large portion of School Health Services' duties.

During the year the old premises in William Street were vacated after being occupied for many years. The improved conditions provided in the new Health and Welfare Building in George Street have facilitated the examination of a greater number of teacher trainees and permitted more parent interviews.

STAFF

There have been few changes in the Nursing staff. Sister A. Ford retired after many years of meritorious service, mostly in the Maryborough area. Young, energetic, and capable Sister L. Boogh was regrettably killed in a motor accident while carrying out her duties in the Cairns area. Other members of the Nursing section continue the efficient supervision of their districts and are proficient in their work. Social and environmental problems have increased while parent interviews have increased in both metropolitan and country areas by nearly 40 per cent., and of the 1,404 interviews, 271 involved home visits.

TEACHER TRAINEE EXAMINATIONS

Medical examinations of teacher trainees are increasing the routine work of School Health Services. This year 1,344 were examined, compared with 989 in the year 1965, and a similar and further increase is anticipated in the next year. Additional examinations for superannuation increased this number to 1,401. The primary school population which is at present in the vicinity of 197,000 is increasing at the rate of 3,000 to 3,500 per year, thus imposing a greater strain on the existing medical staff.

ROUTINE SCHOOL VISITS

In the metropolitan area there are ten districts with equality of school population. In the twelve months 27,136 children were examined fully, while a further 16,760 were examined for visual defects only. The Medical Officers examined 6,973 of these children and 50 were found with heart murmurs which warranted notification to parents. In the country districts which are based in the major urban centres and covering all State primary schools and convents, there are seventeen School Sisters who examined 65,142 children and tested visions of a further 11,888 making a total of 77,030 children. In many centres where Christian Brothers' schools have asked to be visited, the children in primary grades are seen. In the country areas 1,713 children were medically examined by the Chief Medical Officer, and in these fifteen heart murmurs were notified, some occurring among aboriginal children.

TABLE LXI

DETAILS OF ROUTINE SCHOOL HEALTH EXAMINATIONS

—	Metro- politan	Country	Total
Number examined fully	27,136	65,142	92,278
Number examined vision only ..	16,760	11,888	28,648
Total number examined	43,896	77,030	120,926
Number examined by Medical Officers	6,973	1,713	8,686
Children with defects notified ..	1,599 (3.6%)	3,386 (4.4%)	4,985 (4.12%)
Defects notified	1,371	3,875	5,606
Defects notified IVa	205	1,351	1,556
Number examined for colour vision	4,690	16,481	21,171
Colour vision defects notified ..	338	806	1,144 (5.4%)
Colour vision defects not notified ..	216	127	343 (Total 7.0%)
Dental defects notified by Sisters ..	658	1,742	2,400

The incidence of notifiable disabilities was again similar in metropolitan and country areas (4 per cent.) and of these 4,985 children had 5,606 defects for which further examination

was recommended, while a further 1,556 had conditions to which attention was drawn, but did not necessitate immediate action. There is an interval of two months between notifications and receipt of advice of the action taken and 4,488 results are analysed.

TABLE LXII

RESPONSE TO NOTIFICATIONS

—	Sought Treatment	Promise	Left School	Nil Action	Total
Metropolitan ..	1,162 2,621	20 39	32 100	179 335	1,393 3,095
Total ..	3,783	59	132	514	4,488

The immediate response to notifications has further improved from 84.5 per cent. in 1965 to 88.5 per cent., while 1.3 per cent. promised to seek advice at a more suitable opportunity and a further 3 per cent. left school before confirmation could be obtained. It is very pleasing to find that parents are co-operating with School Health Services to this extent, and frequent letters of appreciation are received which affords great encouragement to the Sisters in their important work.

TABLE LXIII

DETAILS OF DEFECTS NOTIFIED

—	Metro- politan	Country	Total
Visual defects notified	892	1,668	2,560 (2.11%)
Squints	144	309	453
Other eye defects	41	155	196
Tonsil enlargement	21	155	176
Groin and scrotal swellings ..	83	194	277
Postural defects	58	104	162
Lower limb defects	27	69	96
Other defects (skin, &c.)	129	644	773
Heart murmurs	50	15	65
Percentage heart defects of child- ren examined by Medical Officers	0.73%	0.87%	0.75%

SPECIFIC DISABILITIES

Unsuspected defective vision is still the most prevalent disability found requiring notification. This does not include those already wearing suitable glasses. The percentage increases to 6 per cent. at secondary school level, and 11.4 per cent. of teacher trainees required further checking of uncorrected or ill-corrected vision. The cover tests revealed 453 latent and manifest squints of varying degree and all were advised to seek further expert examination, particularly where there was some suggestion of amblyopia. A large number of postural defects are found and the majority are advised to remedy the defect, while 162 were notified for further attention. Similarly, knock-knees, flat feet, and hallux valgus are given information, while the more severe cases (96) were notified.

TABLE LXIV

AUDIOMETER TESTING

—	Metro- politan	Country	Total
Number tested with Audiometer ..	28,236	40,353	68,589
Number tested whisper	3,051	21,751	24,802
Hearing loss notified	286	562	848
Referred to C.A.L.	154	37	191

The increased use of audiometry has resulted in more accurate detection of hearing loss, and has shown that the whisper test is unsatisfactory in the school situation. Children who have failed in the whisper test are frequently found to have normal hearing, while others passing the whisper test reveal a high-tone loss on re-testing with the audiometer. In this year, 68,589 children were tested audiometrically, an increase of 13,838 so that 848 children were found to have a

hearing loss, and of these the more severe losses (191) were referred to the Commonwealth Acoustic Laboratory for further consideration. Others were referred to their own Medical Practitioner.

In the medical form completed by parents, many infer their anxiety over various aspects of the child's behaviour, and these parents are given the opportunity to discuss their problems with specialists from Welfare and Guidance branch who attend School Health Services in two sessions per week for this purpose. In this regard, 349 interviews were given, 229 of whom were referred for further counselling from Welfare and Guidance branch, and 63 were referred to their own doctors.

TABLE LXV
INTERVIEWS AND REFERRALS BY SCHOOL SISTERS

	Metro- politan	Country	Total
Interviews by Sisters—			
(a) at schools	376	757	1,133
(b) at homes	103	168	271
(c) total	479	925	1,404
Referred to Social Worker	30	14	44
Referred to Bush Children's Health Scheme .. .. .	..	44	44
Referred to Guidance and Special Education branch .. .. .	..	..	33
Direct referrals to Welfare and Guidance branch .. .. .	..	..	126

School Sisters continued their supervision of the hygiene and sanitation in schools and gave health education talks to the children. The reintroduction of the Health Education manuals and their inclusion in the curriculum will also materially assist in promoting health awareness in the child at school and at home.

VISITS TO ABORIGINAL SETTLEMENTS

This year the Chief Medical Officer completed visits to schools in these settlements, so that children have been seen at Palm Island, Cherbourg, Yarrabah, Hopevale, Bloomfield River, and Woorabinda, in that sequence. There was considerable variation in attitudes and health awareness, but most children appeared willing to learn. In this regard methods of health and hygiene education which induced the greatest interest included films, and to a lesser extent, film-strips, but only those of suitable composition. Lecture talks did not sustain their interest. An improved approach is being developed in association with the Queensland Health Education Council by making a series of film-strips with coloured children participating, and thus a greater and more lasting impact is anticipated. This would integrate with other approaches to general improvement of their welfare.

In most settlements established Nursing services maintain a close supervision of the health of the children and following visits by the School Health Sisters only 38 children of more than 1,000 in all the settlements required notification for disabilities. Of these 15 were notified for deafness and 13 for defective vision. The remainder were for minor disabilities. These notification figures do not include Cherbourg where a more comprehensive survey was carried out and every child examined with the audiometer. Altogether 340 children were examined, and 71 showed a hearing loss greater than 35 decibels. As some were due to active otitis, all were later rechecked and 57 showed a persisting loss. The majority were in the high frequency range, but six had a low frequency (500 cps.) loss only. Thirteen had a bilateral loss.

SECONDARY SCHOOLS

A number of requests were received from various Church schools to carry out visual and audiometric tests, and where possible, such visits were made. As found on a previous survey in secondary schools, the incidence of defective vision, either unsuspected or with unsatisfactory correction, was at the rate of 6.5 per cent. in those examined. In these visits, 4,012 boys and girls were tested and 259 required notification to parents for further vision testing. Only those with hearing difficulty or suspected hearing loss were audiometrically examined, and nineteen were found to have marked hearing losses.

FOURTH YEAR NURSES

Greatly increased numbers of nurses have visited School Health Services and observed procedures in schools. The nurses display great interest and are pleased to see children who have been in hospital and are now adequately coping with school needs. They invariably feel considerable benefit is derived from these visits. In the metropolitan area 201 nurses have attended and 150 from country hospitals, a total of 351 nurses.

OTHER ACTIVITIES

Annual visits to the Queensland Agricultural College at Lawes have continued, giving tetanus inoculations to students and staff. Groups of fifth year medical students studied the scope of School Health Services. The information thus learned is presented to other students in the form of seminars of Public Health. Social Studies students attend annually for a similar purpose. Examinations of school sporting teams for interstate fixtures are carried out at various times throughout the year.

Two fifth year medical students have completed a comprehensive study of the historical background and the environmental factors in the persistence of trachoma among school children in the Cloncurry district. They found that the incidence was mainly in non-white children and the influence of social and environmental factors was significant.

MEDICAL EXAMINATIONS OF TEACHER TRAINEES

The selection of suitable candidates, both physically and mentally, for the teaching profession is of utmost importance and continues to occupy a considerable amount of time throughout the year.

For the first time some preliminary screening of applicants for Teachers Scholarships was carried out before the Christmas vacation. By this means 20 applicants who would have been rejected as medically unfit for the teaching profession were screened out before the end of 1965.

School Health Services was responsible for the routine medical examinations of 1,344 entrants to the Teachers' Colleges. Eight were rejected as medically unfit; a decision regarding the fitness of 19 was deferred for six to twelve months; and reports of further investigations, &c., from various specialists are required before the certificates of thirty more trainees can be finalised.

TABLE LXVI
TYPE AND INCIDENCE OF DEFECTS FOUND AMONG TEACHER TRAINEES

Type	No. Referred	No. Not Referred	Total
"Adjustment"	5	38	43
Asthma .. .. .	..	40	40
Defective vision	152	225	377
Dental caries	361	..	361
E.N.T. conditions	8	31	39
Genito-urinary	12	2	14
Hearing loss	22	..	22
Heart murmur	5	7	12
Hernia	8	..	8
Hypertension	4	..	4
Orthopaedic	15	123	138
Other eye conditions	3	13	16
Overweight	8	16	24
Pigmented moles	14	9	23
Skin conditions	12	13	25
Speech defects	5	10	15
Miscellaneous	20	19	39
Total .. .. .	..	..	1,200

Dental caries was the most commonly found defect, 26.8 per cent. of all students requiring some dental treatment. The next most common condition notified was defective vision, 11.4 per cent., which included unsuspected defects and known defects which required checking. This is well in excess of the figures for primary school (2.11 per cent.) and high school children (6 per cent.).

In spite of the preliminary screening prior to the commencement of the academic year, 22 students (1.6 per cent.) were found to have a hearing loss which required investigation at the Commonwealth Acoustic Laboratory. Of these, six were found to be unacceptable using the hearing standards adopted in 1965.

Orthopaedic defects were again prevalent, but only 15 (1.1 per cent.) required notification. In the majority of cases the defect was moderate to severe structural scoliosis.

Pigmented moles were scrutinized and 14 students were recommended to seek further advice. In almost every case, the moles were removed.

More speech defects were found this year. Ten mild ones with a faulty "S" sound were noted, but five needed referral either for a preliminary E.N.T. examination (dysphonia) and/or assessment by a speech therapist (rhinolalia aperta, stammer, functional dysphonia).

As usual there was close co-operation between the Psychiatric Clinic and School Health Services in the assessment of emotional problems in the teacher trainees. Five first-year students were referred for full investigation. Liaison was also maintained with the Student Health Service at the University of Queensland.

Routine monthly clinics were held for both Colleges throughout the year, and students were also encouraged to make appointments after school hours. Although these Clinics are essentially advisory, 258 students were seen. Most were reassured or referred to general practitioners; thirteen were referred to the Psychiatric Clinic.

At the request of the Public Service Superannuation Board, 50 teachers were reassessed medically after graduation because their attendance record during training had been poor. All were found medically fit for teaching, but seven were unfit for superannuation. A decision regarding two was deferred for six months and four are awaiting reports.

SCHOOL DENTAL SERVICES

There has been a marked improvement in dental awareness and oral cleanliness. Dental Officers have emphasized this aspect of dental health. There has been an increase in the number of secondary teeth that can be restored with a corresponding reduction in the extraction of secondary teeth.

The D.M.F. (diseased, missing, and filled) rate was 2.5, while the proportion of dirty teeth was 10 per cent. In 1916 there was one extraction to one filling. In 1966 there was one extraction to 3.46 fillings.

The progressive improvement of equipment is reflected in the change from many extractions to a greater number of restorations of teeth and a better appreciation of dental hygiene. There is a small reduction in the total number of children examined owing to the absence of two Officers on long service leave and the resignation of two Officers. It is anticipated that all vacancies will be filled in 1967. The continued use of high speed air rotor units is improving the image of the School Dental Officer. Shadowless operating lamps are under trial in all Rail Dental Clinics. The electrical power unit will not permit the installation of air conditioning and a system of exhaust fans is under trial in semi-tropical conditions.

TABLE LXVII
DETAILS OF SCHOOL DENTAL EXAMINATIONS

Number of children examined	..	..	..	30,184
Number of children notified for professional attention	..	..	..	5,817
Number of children under regular dental care—				
Clinic	..	..	..	953
School Dental Service	..	..	..	10,861
Private Dentist	..	..	..	9,016
Number of children with sound mouths—				
Naturally	..	..	..	1,685 (5.5%)
Operatively restored	..	..	..	5,240 (17.3%)
Carious permanent teeth—				
Savable	..	..	..	36,610
Unsavable	..	..	..	2,756
Carious temporary teeth	..	..	..	43,471
Permanent teeth lost or extracted	..	..	..	6,581
Six year molars extracted	..	..	..	5,901
Permanent teeth filled	..	..	..	42,411
Temporary teeth filled	..	..	..	22,800
Percentage of children with dirty mouths	..	..	..	10%
Total number of defective permanent teeth	..	..	..	39,366
Average number of defective permanent teeth per child	..	..	..	1.3

TABLE LXVIII
DENTAL TREATMENTS

Number of schools visited	..	..	..	426
Number of children examined	..	..	..	30,184
Number of children treated	..	..	..	11,256
Number of extractions of permanent teeth	..	..	..	1,113
Number of extractions of temporary teeth	..	..	..	9,479
Number of fillings	..	..	..	36,814
Number of teeth treated	..	..	..	33,514
Number of operations	..	..	..	88,210

DIVISION OF PSYCHIATRIC SERVICES

Director of Psychiatric Services: B. F. R. STAFFORD, M.B., B.S. (Melb.), F.A.N.Z.C.P., A.B.P.S. to 31st December, 1965; G. S. URQUHART, M.B., B.S. (Qld.), D.P.M. (Melb.)

Medical Superintendent, Brisbane Special Hospital: O. E. ORFORD, M.B., B.S., D.P.M.

Medical Superintendent Toowoomba Special Hospital: J. H. B. HENDERSON, M.B., B.S. (Syd.)

Medical Superintendent, Ipswich Special Hospital: R. A. ATHERTON, L.R.C.P. (Edin.); L.R.C.S. (Edin.); L.R.F.P.S. (Glasgow)

Psychiatrist, Psychiatric Clinic: I. W. W. CHARLES, M.B., B.S. (Melb.), D.P.M. (Melb.)

Visiting Medical Officer, Mosman Hall, Charters Towers: I. CSEREY, M.B., B.S. (Melb.)

Superintendent, Epileptic Home: K. T. FLYNN

Administration Officer: A. C. MCALLISTER, B.Com. to 30th May, 1966, H. J. SPARKS

VALEDICTION

On the 31st December, 1965, Dr. B. F. R. Stafford retired from the post of Director of Psychiatric Services, bringing to a close a Public Service life of 39 years. His ability as a psychiatrist and administrator was matched by his high sense of loyalty to those he served.

After graduating from the University of Melbourne in 1924 Dr. Stafford spent 3 years in general practice in Victoria and Tasmania. He was appointed Assistant Medical Superintendent at the Toowoomba Mental Hospital and took up this post on his arrival in Queensland in 1927. The following year he was appointed as Superintendent of the Ipswich Mental Hospital and he remained in this post until after his return from an overseas trip in 1937. On his return from overseas he took up appointment as Medical Superintendent of the Brisbane Mental Hospital at Goodna and he brought back with him up-to-date knowledge of world trends in Psychiatry at that time, both in the clinical and administrative fields. "*The Mental Hygiene Act of 1938*" was a direct result of the knowledge he had gained overseas and this Act revolutionized attitudes within our mental hospitals. At this time Dr. Stafford introduced cardiazol treatment and insulin coma to Queensland and later the use of E.C.T. At that time too he introduced an "honour system" to Goodna, the forerunner of the open hospital policy. During World War II he held the substantive rank of Lieutenant-Colonel and was a Commanding Officer of the Light Field Ambulance until recalled to his home station at the Brisbane Mental Hospital.

Dr. Stafford was appointed the Director of Mental Hygiene in Queensland following the proclamation of the 1938 Act and continued to hold this post until his retirement in 1965.

The war brought with it great difficulties, not the least of which was the limitation of funds which could be spent in the field of mental health. Despite this Dr. Stafford set himself the task of outlining an ambitious development plan for the State Psychiatric Services and his Annual Report in 1946 foreshadowed the advances in administrative design that over the years have become part of Queensland's service. It was due to his own personal efforts that the first community service of a Psychiatric Clinic was set up in the metropolitan area. From this Clinic has grown the present Psychiatric Clinic with its forensic and after-care services and the huge development of the Welfare and Guidance Clinics for children. In the field of legislation he played a significant part in some major developments. As a member of the Committee under the chairmanship of the then Chief Justice Neil Macrossan "*The Criminal Law Amendment Act of 1945*" was formulated and this piece of legislation today is still an example of how the offender can be directed to rehabilitative punishment or to treatment. In 1950 the Central Office of the Director of Mental Hygiene was set up and as a result of this the Mental Health Services in Queensland have been able to develop on a regional basis. In 1952 Dr. Stafford was elected President of the Australian Association of Psychiatrists. Throughout the whole of his career he stimulated the teaching and study of psychiatry as a branch of medicine and actively promoted the acceptance of psychiatrists and medical practitioners of mental hospitals by the rest of the medical profession and the community as a whole. He showed a wide interest in the paramedical services and was associated with the development of the schools of occupational therapy, physiotherapy and speech therapy. He was a member of the Board of Studies of Social Work and an associate of

the British Psychological Society, which body on his retirement elected him to honorary membership. In his last year in office he was elected as a foundation Fellow of the Australian and New Zealand College of Psychiatrists.

His interest in the nursing profession resulted in the raising of standards of mental nurses. From being custodians of their patients they have become responsible members of the healing team. Dr. Stafford served on the Nurses' Board for over 16 years and took as great an interest in general nursing and the other specialties of nursing as he did in mental nursing.

As early as 1947 Dr. Stafford realised that the effective care of the geriatric and infirm people must be diverted from the mental hospital system to its proper place in hospitals and Eventides readily accessible by the community. The implementation of this policy has given Queensland an enviable reputation for the care of its geriatric patients and the low percentage of old people nursed in our special hospitals.

Another area of psychiatric endeavour which Dr. Stafford fostered was the proper care and training of subnormal children. The fact that today in Queensland those subnormal people resident in our hospitals have the benefit of training methods second to none in the world is due to the proper planning and appreciation of this problem that he has devoted to it and is a tribute to his ability to work co-operatively with other professional disciplines.

Probably the greatest contribution which Dr. Stafford has made to the psychiatric services was his willingness and ability to follow through the policy of integration of psychiatric services into general hospitals of this State. Instead of continuing to build an empire within the Division of Psychiatric Services he has whole-heartedly encouraged the development of psychiatric units in general hospitals. This has not only served to keep those with psychiatric illness in the community, but has done much to further the goals of psychiatry as a branch of medicine.

On his retirement he leaves a Division founded on the soundest of legislative principles with a flexibility which will allow it to develop in accordance with the best of world trends. To build on this foundation is the challenge to those who follow.

MENTAL HEALTH STATISTICS

In October 1965, a conference on an Australasian wide basis was held in Hobart and this has done much to promote better recording and processing of data. In association with the State Government Statistician this Division conducted a census of patients under psychiatric care in special and general hospitals throughout the State on 30th June. A direct comparison with the population census will be possible. A central records office is being established and the census will be continued on an annual basis.

Few changes have been made in the published tables for this year, but it is anticipated that the tables for the next year will be in accordance with the recommendations of the Australasian Conference. This year the forms of mental disorder are published in accordance with the list of short diagnoses recommended by the Conference and discharges are not divided into recovered, relieved, or not improved.

The most notable fact revealed by this year's figures is the decrease in admission rates to special hospitals. The overall figures show a fall of 190, that is, more than 10 per cent. The

decrease in admissions is, without doubt, due to the effect of the psychiatric units in general hospitals and in particular to the Chermside Neuropsychiatric Unit. As it is anticipated that the number of beds available for psychiatric care in general hospitals will increase, this decrease in admissions to special hospitals can be expected to continue for some time in spite of a rising State population.

The admission rate of those suffering from alcoholism has shown some decrease in keeping with the overall fall of admissions but still accounts for 13 per cent. of total admissions. The number of persons over the age of 60 admitted to special hospitals has shown a marked decrease of over 20 per cent., but this decrease will only be sustained if facilities for assessment of the geriatric patient continue to increase.

During the year a study has been conducted at the Brisbane Special Hospital on those admitted who are aged 65 years and over. Almost 60 per cent. were diagnosed as arteriosclerotic dementia, while only 12 per cent. were diagnosed as senile dementia. More than a third of the patients admitted during the current year died before the year ended. This indicates that the special hospital is still used as "the end of the road" for some of the physically ill who had become a nursing problem. A further third of those admitted have been discharged, leaving only one-third of the year's admissions in hospital on 30th June.

Intellectual subnormality accounts for almost one in eight of the total admissions. During the year a review of the subnormal patients in our special hospitals was carried out. Although the admission rate is only one in eight, intellectual subnormality accounts for more than one in three of the residents of our hospitals. 350 of these are less than 16 years of age. The sex distribution is of the order of 7 males to 6 females. 400 of the total are severely subnormal requiring full nursing care. A redistribution of the subnormal patient population has been planned to allow better facilities for them and better care for the mentally ill.

The high proportion of intellectually subnormal patients contributes to the length of residence in special hospitals. 1,135 patients of those discharged during the year had been in hospital for less than one year. This number accounts for one in five patients under care. On the other hand 673 have been in residence more than twenty years and these account for 17 per cent. of those remaining on the books. The special hospitals have, therefore, to turn their attention to the resocialisation and rehabilitation of the long stay patient. This matter has received attention during this year and resocialisation units in association with industrial therapy are being introduced into the Brisbane Special Hospital.

BUILDING AND MAINTENANCE

One of the major works conducted by this Division this year has been the building of a well designed and spacious occupational therapy section at the Winston Noble Neuropsychiatric Unit at Chermside Hospital. This new building will add to the effectiveness of treatment and release further bed accommodation presently being used for occupational therapy.

The Training Centre for Subnormal Adults at Wacol has been completed. This Unit will be used as a training centre for life in community hostels or other sheltered accommodation. Work has been started on a special school for the children at the Wacol Children's Training Centre. The architectural design is outstanding and its functional value is ensured. A pavilion type ward at the Brisbane Special Hospital has been completely renovated for use as a clinical and cultural activities centre. The hospital ward at the Toowoomba Special Hospital has been completely renovated.

In this era of decreasing admission rates and a diminishing daily bed average, attention must be turned to the renovation of the structurally sound buildings so that smaller nursing units

providing for the activities of daily living can emerge from the large institutional dormitory type building. This year has seen an acceleration of structural renovations in the Brisbane Special Hospital and more importantly marked improvements in living conditions for patients in all hospitals. A vacated ward at the Brisbane Special Hospital has been repaired and redecorated and now provides an activities centre from which two occupational therapists have operated since their appointment early in 1966. Contracts have been let for the furnishing of two wards at the Brisbane Special Hospital. Patients will be provided with combination wardrobe-dressing table units in laminate and dormitories will be divided by connecting screens.

The other urgent building need at our special hospitals is for accommodation for artisan staff and to a lesser extent administrative staff. The work on the new laundry at Toowoomba estimated to cost \$600,000 is ready to start, but the need for properly designed artisan accommodation for all hospitals is very great.

STAFF

The need for a larger proportion of experienced and qualified medical staff in special hospitals remains unfilled. However, this year some excellent improvements have occurred in professional staffing. Three occupational therapists and two social workers have joined the hospital service. Unfortunately resignations have also taken their toll. Although it must be expected that professional staff will leave to further their studies or broaden their experience, the service is adversely affected because vacancies remain unfilled for lengthy periods.

Stimulation of the staff has resulted from the regular clinical meetings and the participation of the professorial unit is much appreciated. The Brisbane Special Hospital has been established as a valuable adjunct to the clinical schools in public hospitals and students, tutors and hospital have profited from the clinical teaching activity.

The Official Visitors to the Special Hospitals have been of great value and their reports reflect the structural and therapeutic improvements in the service.

COMMUNITY ACTIVITIES

The Psychiatric Clinic has broadened its field despite the restrictions of professional staffing and accommodation. In spite of these needs the Clinic is developing effective relationships with community activities, playing an expanded role in forensic psychiatry as well as providing after-care services for the special hospitals and a psychotherapy out-patient service.

The psychiatrist and psychologist of the Clinic have regularly participated in meetings with the Prisons Department on the Classification Committee of H.M. Prisons. This has meant a closer liaison between the two Services and a greater participation in the study of the psychiatry of the criminal. The matters of research and teaching of medical, social studies, psychology and speech therapy students has had to be greatly curtailed on the ground of the shortage of professional personnel.

The Epileptic Home has undergone renovation and extension. This will provide more accommodation for suitable patients to profit from the treatment programme and retain their personal independence.

Griffiths House, the hostel established by the Mental Welfare Association has been most successful in its initial year of functioning and has justified the enthusiasm and faith of the Association and the financial assistance of the State Government.

This Division is conscious of the important contribution made to the mental health services by community effort and is deeply appreciative of the work of organisations and individuals in this field. The Division is also conscious of the needs of patients yet to be met and looks forward to working together with community representatives in the furtherance of the patients' welfare.

TABLE LXIX
PATIENT POPULATION

	Patients Resident at 30th June, 1965			Patients Resident at 30th June,1966		
	Females	Males	Total	Females	Males	Total
Brisbane Special Hospital	709	1,044	1,753	632	1,050	1,682
Toowoomba Special Hospital	447	568	1,015	440	564	1,004
Ipswich Special Hospital	327	306	633	284	307	591
Mosman Hall, Charters Towers .. .. .	..	218	218	..	229	229
Totals	1,483	2,136	3,619	1,356	2,150	3,506

TABLE LXX
QUEENSLAND SPECIAL HOSPITALS
SHOWING ADMISSIONS, RE-ADMISSIONS, DISCHARGES AND DEATHS DURING THE YEAR ENDED 30TH JUNE, 1966

	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Females	Totals	Males	Females	Totals	Males	Females	Totals		Males	Females	Totals
On the Books of the Hospital on 1st July, 1965	1,147	837	1,984	583	481	1,064	306	332	638	232	2,268	1,650	3,918
Admitted for the first time—													
Informal admissions	107	56	163	54	88	142	15	16	31	39	215	160	375
Regulated admissions (Sections 18, 19 and 22)	180	101	281	23	24	47	2	..	2	14	219	125	344
Admissions under Hospital Orders	64	31	95	11	7	18	..	..	..	40	115	38	153
Part IV admissions	..	1	1	..	..	..	12	..	12	..	12	1	13
Re-admitted—													
Informal admissions	104	138	242	43	95	138	2	..	2	18	167	233	400
Regulated admissions (Sections 18, 19 and 22)	65	88	153	19	22	41	1	..	1	5	90	110	200
Admissions under Hospital Orders	25	36	61	7	..	7	..	..	..	21	53	36	89
Part IV admissions	..	2	2	..	..	..	3	..	3	..	3	2	5
Total Admissions	545	453	998	157	236	393	35	16	51	137	874	705	1,579
Totals on Books and Admissions—All Hospitals	1,692	1,290	2,982	740	717	1,457	341	348	689	369	3,142	2,355	5,497
Transferred from Brisbane Special Hospital	..	..	..	24	21	45	2	..	2	6	32	21	53
Transferred from Toowoomba Special Hospital	9	1	10	..	..	..	1	2	3	..	10	3	13
Transferred from Ipswich Special Hospital	2	25	27	3	6	9	..	..	..	..	5	31	36
Transferred from Mosman Hall Special Hospital	1	..	1	1	..	1	..	..	..	..	2	..	2
Transferred from Public Hospitals..	..	2	2	..	..	..	..	..	..	1	1	2	3
*Total number under care during the year	1,704	1,318	3,022	768	744	1,512	344	350	694	376	3,192	2,412	5,604
Discharged—													
Recovered and Relieved	177	253	430	49	49	98	10	2	12	57	293	304	597
Not Improved	19	7	26	7	10	17	5	12	17	2	33	29	62
Informal patients	186	208	394	85	172	257	..	..	..	60	331	380	711
Total Discharges	382	468	850	141	231	372	15	14	29	119	657	713	1,370
Died	86	69	155	34	18	52	16	16	32	14	150	103	253
Total Number Discharged and Died	468	537	1,005	175	249	424	31	30	61	133	807	816	1,623
Transferred to Brisbane Special Hospital	..	..	..	8	1	9	2	25	27	1	11	26	37
Transferred to Toowoomba Special Hospital	24	21	45	..	..	..	3	6	9	1	28	27	55
Transferred to Ipswich Special Hospital	2	..	2	2	2	4	..	..	..	..	4	2	6
Transferred to Mosman Hall Special Hospital	6	..	6	..	..	..	..	..	..	..	6	..	6
Transferred to Public Hospitals	1	1	2	..	..	..	..	..	..	..	1	1	2
Total number discharged, died, &c., during year	501	559	1,060	185	252	437	36	61	97	135	857	872	1,729
Remaining on Books of Hospitals on 30th June, 1966	1,203	759	1,962	583	492	1,075	308	289	597	241	2,335	1,540	3,875
Average Number Daily Resident	1,034	670	1,704	567	436	1,003	305	306	611	218	2,124	1,412	3,536
Number on leave of absence on 30th June, 1966	153	127	280	19	52	71	1	5	6	12	185	184	369
Proportion of number of patients remaining on books to each 1,000 of population as at 30th June, 1966	..	..	..	..	..	..	..	..	..	..	2.83	1.92	2.38
Proportion of Admissions per 10,000 of population for year ended 30th June, 1966	..	..	..	..	..	..	..	..	..	..	10.59	8.80	9.70

* These totals include interhospital transfers.

TABLE LXXI

BODILY HEALTH AND CONDITION OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1966

	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Males	Fe-males	Totals
In apparently good health and condition	335	293	628	118	187	305	29	10	39	73	555	490	1,045
In indifferent health and reduced condition	190	143	333	27	43	70	5	5	10	42	264	191	455
In bad health and exhausted condition	20	17	37	12	6	18	1	1	2	22	55	24	79
Totals	545	453	998	157	236	393	35	16	51	137	874	705	1,579

TABLE LXXII

FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING TWELVE MONTHS ENDED 30TH JUNE, 1966 GROUPED BY SHORT DIAGNOSIS.

Diagnostic Groups	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Total	Males	Fe-males	Total	Males	Fe-males	Total	Males	Males	Fe-males	Total
1. Senile and pre-senile dementia	11	21	32	11	11	22	1	..	1	10	33	32	65
2. Alcoholic psychosis	14	2	16	5	..	5	..	..	..	4	23	2	25
3. Other organic psychosis	65	43	108	1	2	3	..	..	..	1	67	45	112
4. Schizophrenia and paranoid states	159	174	333	50	49	99	5	..	5	40	254	223	477
5. Depressive psychosis	23	31	54	18	70	88	1	..	1	1	43	101	144
6. Other functional psychoses	7	..	7	13	35	48	..	..	..	3	23	35	58
7. Depressive neurosis	14	46	60	2	18	20	..	..	..	..	16	64	80
8. Other neuroses and psychosomatic disorders ..	13	19	32	8	23	31	1	..	1	1	23	42	65
9. Alcoholism	107	21	128	29	6	35	..	..	..	54	190	27	217
10. Other personality disorders	50	35	85	10	4	14	2	..	2	9	71	39	110
11. Transient situational disturbances and behaviour disorders of children	2	4	6	1	6	7	..	..	..	..	3	10	13
12. Non-psychotic mental disorder associated with physical condition	9	5	14	2	..	2	..	..	..	12	23	5	28
13. Mental retardation	71	52	123	7	12	19	25	16	41	2	105	80	185
Totals	545	453	998	157	236	393	35	16	51	137	874	705	1,579

TABLE LXXIII

CAUSES OF DEATH WHICH OCCURRED DURING YEAR ENDED 30TH JUNE, 1966

Statistical Classification	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Total	Males	Fe-males	Total	Males	Fe-males	Total	Males	Males	Fe-males	Totals
<i>Infective and Parasitic Diseases—</i>													
053 Septicaemia and Pyaemia .. .. .	..	1	1	..	..	..	..	..	..	..	..	1	1
<i>Malignant Neoplasm of Digestive Organs and Peritoneum—</i>													
151 Malignant Neoplasm of Stomach	1	..	1	..	..	..	..	..	..	..	1	..	1
155 Malignant Neoplasm of biliary passages and of liver (primary) .. .. .	..	..	..	..	..	..	1	..	1	..	1	..	1
157 Malignant Neoplasm of Pancreas	1	..	1	..	..	..	..	..	..	..	1	..	1
<i>Malignant Neoplasm of Breast and Genito-Urinary Organs—</i>													
170 Malignant Neoplasm of Breast .. ..	..	1	1	..	..	..	..	..	..	..	..	1	1
171 Malignant Neoplasm of Cervix Uteri ..	..	..	..	..	..	..	..	1	1	..	..	1	1
180 Malignant Neoplasm of Kidney .. ..	..	..	..	..	..	..	..	1	1	..	..	1	1
<i>Malignant Neoplasm of Other and Unspecified Sites—</i>													
193 Malignant Neoplasm of Brain and other parts of Nervous System	1	..	1	..	..	..	..	..	..	..	1	..	1
<i>Diseases of Nervous System and Sense Organs—</i>													
331 Cerebral Haemorrhage	2	3	5	..	..	..	..	2	2	..	2	5	7
332 Cerebral Embolism and Thrombosis ..	3	1	4	1	1	2	..	..	..	2	6	2	8
341 Phlebitis and thrombophlebitis of intracranial venous sinuses .. .. .	..	..	..	..	..	..	1	..	1	..	1	..	1
<i>Inflammatory Diseases of Central Nervous System—</i>													
343 Encephalitis	1	..	1	..	..	..	..	..	..	..	1	..	1
<i>Other Diseases of Central Nervous System—</i>													
353 Epilepsy .. .. .	..	1	1	..	..	..	..	1	..	..	..	1	1
355 Other Diseases of Brain .. .. .	..	..	..	1	..	1	2	1	3	..	3	1	4
<i>Arteriosclerotic and Degenerative Heart Disease—</i>													
410 Diseases of Mitral Valve .. .. .	..	..	..	..	..	..	..	1	1	..	..	1	1
420 Arteriosclerotic Heart Disease so—													
(a) described	10	1	11	..	..	..	2	1	3	..	12	2	14
(b) Heart disease specified as involving coronary arteries	12	7	19	1	..	1	..	..	..	5	18	7	25
422 (b) Myocardial Degeneration with arterio sclerosis .. .. .	..	..	..	7	5	12	..	..	..	..	7	5	12
(c) Myocardial Degeneration—Other ..	1	2	3	1	..	1	..	2	2	..	2	4	6
431 Acute Myocarditis not specified as rheumatic .. .. .	..	..	..	2	..	2	..	..	..	..	2	..	2
(a) Functional Diseases of the Heart without mention of Arteriosclerosis ..	..	..	..	..	..	..	..	..	..	1	1	..	1
434 Other and Unspecified Diseases of the Heart .. .. .	..	..	..	1	3	4	..	..	..	..	1	3	4
<i>Hypertensive Heart Disease—</i>													
440 Essential Benign Hypertensive Heart Disease ..	2	..	2	..	..	..	..	..	..	..	2	..	2
451 Aortic Aneurysm, non-syphilitic and dissecting Aneurysm .. .. .	..	..	..	1	..	1	..	..	..	..	1	..	1
454 Arterial Embolism and Thrombosis ..	..	..	..	7	3	10	..	..	..	1	8	3	11
<i>Diseases of Veins and other Diseases of Circulatory System—</i>													
462 Varicose Veins of other specified sites ..	1	..	1	..	..	..	..	..	..	..	1	..	1
<i>Diseases of the Respiratory System—</i>													
<i>Acute Upper Respiratory System—</i>													
475 Acute Upper Respiratory Infection of Multiple Sites .. .. .	..	1	1	..	..	..	..	..	..	..	..	1	1
<i>Pneumonia—</i>													
490 Lobar Pneumonia	5	4	9	..	..	..	..	2	2	1	6	6	12
491 Bronchopneumonia	21	21	42	12	6	18	4	2	6	3	40	29	69
492 Primary Atypical Pneumonia	1	..	1	..	..	..	..	..	..	..	1	..	1
493 Other and unspecified Pneumonia	9	12	21	..	..	..	1	..	1	1	11	12	23
<i>Bronchitis—</i>													
502 (a) Chronic Bronchitis without mention of Asthma	1	..	1	..	..	..	..	..	..	..	1	..	1
<i>Other Diseases of the Respiratory System—</i>													
521 Abscess of Lung .. .. .	..	1	1	..	..	..	..	..	..	..	..	1	1
522 Pulmonary Congestion and Hypostasis ..	..	3	3	..	..	..	..	..	..	..	..	3	3
<i>Diseases of Digestive System—</i>													
539 Diseases of Oesophagus .. .. .	..	..	..	..	..	..	1	..	1	..	1	..	1
540 Ulcer of Stomach .. .. .	..	..	..	..	..	..	..	1	1	..	..	1	1
545 Other Diseases of Stomach and Duodenum ..	..	..	..	..	..	..	1	..	1	..	1	..	1
<i>Hernia of Abdominal Cavity—</i>													
560 Hernia of Abdominal Cavity without mention of obstruction	1	..	1	..	..	..	..	..	..	..	1	..	1
<i>Other Diseases of Intestines and Peritoneum—</i>													
571 Gastro-enteritis and Colitis except ulcerative age four weeks and over .. .. .	..	1	1	..	..	..	..	..	..	..	..	1	1
576 Peritonitis .. .. .	..	..	..	..	..	..	1	..	1	..	1	..	1
<i>Diseases of Genito-Urinary System, Nephritis and Neophrosis—</i>													
593 Nephritis not specified as Acute or Chronic ..	..	1	1	..	..	..	..	..	..	..	..	1	1
600 Infections of the Kidney .. .. .	..	..	..	..	..	..	1	..	1	..	1	..	1
<i>Other Diseases of Urinary System—</i>													
603 Other Diseases of the Kidney and the Ureter ..	..	1	1	..	..	..	..	..	..	..	..	1	1
605 Cystitis	1	..	1	..	..	..	..	..	..	..	1	..	1
<i>Symptoms, Senility and Ill-defined Conditions—</i>													
<i>Symptoms Referable to Systems or Organs—</i>													
792 Uraemia .. .. .	..	1	1	..	..	..	..	..	..	..	..	1	1
<i>Accidents, Poisonings and Violence—other Accidents—</i>													
917 Accident caused by hot substance, corrosive liquid and steam .. .. .	..	1	1	..	..	..	..	..	..	..	..	1	1
919 Accident caused by Firearm	1	..	1	..	..	..	..	..	..	..	1	..	1
921 Inhalation and Ingestion of Food causing obstruction or suffocation .. .. .	..	..	..	..	..	..	1	2	3	..	1	2	3
929 Accidental Drownings and Submersion ..	3	..	3	..	..	..	..	..	..	..	3	..	3
971 Suicide and Self-inflicted Poisoning by other solid and liquid substances	1	2	3	..	..	..	..	..	..	..	1	2	3
974 Suicide and self-inflicted injury by hanging and strangulation	1	..	1	..	..	..	..	..	..	..	1	..	1
Coroner's Cases yet Unknown	6	3	9	..	..	..	..	..	..	..	6	3	9
Totals	86	69	155	34	18	52	16	16	32	14	150	103	253

TABLE LXXIV
BIRTH PLACES OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1966

	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals			
	Males	Fe- males	Totals	Males	Fe- males	Totals	Males	Fe- males	Totals	Males	Males	Fe- males	Totals	
Queensland'	281	283	564	106	174	280	29	13	42	73	489	470	959	
Other Australian States—														
New South Wales	54	56	110	21	26	47	4	3	7	17	96	85	181	
Victoria	19	18	37	5	5	10	1	..	1	6	31	23	54	
South Australia	7	1	8	1	1	2	..	..	..	2	10	2	12
Western Australia	5	2	7	..	1	1	..	..	..	1	6	3	9
Tasmania	9	5	14	1	2	3	..	..	..	..	10	7	17
Northern Territory .. .. .	..	2	2	..	..	..	..	..	..	..	..	2	2
Total Australia	375	367	742	134	209	343	34	16	50	99	642	592	1,234	
New Zealand	2	2	4	..	2	2	..	..	..	1	3	4	7
Pacific Islands and New Guinea .. .. .	..	..	..	..	..	..	..	..	..	2	2	..	2
Great Britain and Ireland	50	32	82	10	14	24	..	..	..	14	74	46	120
Europe (other)	48	32	80	9	6	15	1	..	1	16	74	38	112	
Asia—														
China	2	1	3	..	..	..	..	..	..	..	2	1	3
India, Pakistan, Ceylon	1	1	2	..	..	..	..	..	..	..	1	1	2
North America	2	1	3	..	..	..	..	..	..	..	2	1	3
South America	1	1	2	1	..	1	..	..	..	..	2	1	3
Africa	5	..	5	..	..	..	..	..	..	1	6	..	6
Unknown	59	16	75	3	5	8	..	..	..	4	66	21	87
Totals	545	453	998	157	236	393	35	16	51	137	874	705	1,579	

TABLE LXXV
DISTRICTS WHENCE PATIENTS WERE RECEIVED DURING THE YEAR ENDED 30TH JUNE, 1966

				Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals		
				Males	Fe- males	Totals	Males	Fe- males	Totals	Males	Fe- males	Totals	Males	Males	Fe- males	Totals
Northern and North-Western ..				20	26	46	..	..	..	10	2	12	128	158	28	186
Central				29	9	38	..	..	..	5	5	10	1	35	14	49
Southern and South-Western ..				496	418	914	157	236	393	20	9	29	8	681	663	1,344
Totals				545	453	998	157	236	393	35	16	51	137	874	705	1,579

TABLE LXXVI
GENERAL CLASSIFICATION OF OCCUPATIONS OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1966

Occupations	Brisbane Special Hospital			Toowoomba Special Hospital			Ipswich Special Hospital			Mosman Hall, Charters Towers	Totals			
	Males	Fe- males	Totals	Males	Fe- males	Totals	Males	Fe- males	Totals	Males	Males	Fe- males	Totals	
Rural Industries	18	1	19	24	..	24	6	..	6	12	60	1	61	
Secondary Industries, Trades, &c.—														
Building Construction	19	..	19	16	..	16	..	..	..	8	43	..	43
Machinery and Electrical	17	..	17	7	..	7	..	..	..	9	33	..	33
Foodstuffs, Meat, &c.	16	..	16	3	1	4	1	..	1	5	25	1	26	
Clothing, Retail, &c.	3	2	5	..	..	..	..	..	..	..	3	2	5
Mining	2	..	2	..	..	..	1	..	1	3	6	..	6
Transport	9	..	9	7	..	7	..	..	..	4	20	..	20
Clerical	10	9	19	12	5	17	2	..	2	2	26	14	40	
Domestic Employment	5	258	263	..	175	175	..	..	..	..	5	433	438
Private Employment	2	1	3	1	1	2	..	..	..	..	3	2	5
Miscellaneous Employment	147	9	156	36	..	36	2	..	2	47	232	9	241	
No Occupation, and Pensioners	235	146	381	44	45	89	4	..	4	43	326	191	517	
Professions	15	11	26	3	3	6	..	..	..	..	18	14	32
Children	31	16	47	3	5	8	19	16	35	2	55	37	92	
Unknown	16	..	16	1	1	2	..	..	..	2	19	1	20
Totals	545	453	998	157	236	393	35	16	51	137	874	705	1,579	

TABLE LXXVII

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966
BRISBANE SPECIAL HOSPITAL

Age Groups	Admissions			Discharges			Deaths			Remaining		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 5 years	3	1	4	1	..	1	..	..	..	..	..	..
5 years and under 10 years ..	15	5	20	1	..	1	..	1	1	33	11	44
10 years and under 15 years ..	10	13	23	5	1	6	..	1	1	59	50	109
15 years and under 20 years ..	29	21	50	20	19	39	1	1	2	84	61	145
20 years and under 25 years ..	46	35	81	38	38	76	2	1	3	82	47	129
25 years and under 30 years ..	45	29	74	36	26	62	1	3	4	69	39	108
30 years and under 35 years ..	44	40	84	36	50	86	3	1	4	79	32	111
35 years and under 40 years ..	48	53	101	49	52	101	..	1	1	96	62	158
40 years and under 45 years ..	66	51	117	40	60	100	5	3	8	141	82	223
45 years and under 50 years ..	57	58	115	50	66	116	3	3	6	138	94	232
50 years and under 55 years ..	48	36	84	36	42	78	6	4	10	123	69	192
55 years and under 60 years ..	35	26	61	22	47	69	7	1	8	100	66	166
60 years and under 65 years ..	21	13	34	16	18	34	8	4	12	82	51	133
65 years and under 70 years ..	18	11	29	9	17	26	10	5	15	55	23	78
70 years and under 75 years ..	16	20	36	10	16	26	11	8	19	30	21	51
75 years and under 80 years ..	15	19	34	4	8	12	11	16	27	13	23	36
80 years and under 85 years ..	7	16	23	5	6	11	12	10	22	14	18	32
85 years and under 90 years ..	6	3	9	1	2	3	5	4	9	4	4	8
90 years and under 95 years ..	1	2	3	..	..	..	1	2	3	1	3	4
95 years and under 100 years ..	..	1	1	..	..	..	..	..	..	..	3	3
Unknown	15	..	15	3	..	3	..	..	..	..	..	..
Totals	545	453	998	382	468	850	86	69	155	1,203	759	1,962

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Single	311	149	460	233	132	365	34	19	53	918	435	1,353
Married	119	192	311	87	209	296	36	23	59	174	177	351
Separated	43	31	74	21	42	63	3	2	5	39	92	131
Widowed	29	72	101	17	70	87	7	25	32	17	17	34
Divorced	20	9	29	11	15	26	4	..	4	54	36	90
Unknown	23	..	23	13	..	13	2	..	2	1	2	3
Totals	545	453	998	382	468	850	86	69	155	1,203	759	1,962

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR, AND OF THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Under 1 month .. .. .	..	..	..	84	72	156	23	10	33	40	34	74
1 month and under 3 months ..	..	..	..	106	168	274	12	7	19	58	53	111
3 months and under 6 months ..	..	..	..	74	83	157	7	10	17	88	74	162
6 months and under 9 months ..	..	..	..	26	40	66	5	5	10	85	55	140
9 months and under 12 months ..	..	..	..	25	33	58	5	5	10	68	34	102
1 year and under 2 years ..	..	..	..	30	32	62	7	7	14	129	86	215
2 years and under 3 years ..	..	..	..	10	13	23	1	7	8	75	59	134
3 years and under 5 years ..	..	..	..	10	12	22	4	3	7	110	76	186
5 years and under 7 years ..	..	..	..	3	5	8	6	3	9	86	91	177
7 years and under 10 years ..	..	..	..	4	3	7	3	4	7	121	33	154
10 years and under 12 years ..	..	..	..	3	1	4	2	1	3	46	21	67
12 years and under 15 years ..	..	..	..	2	1	3	3	2	5	81	34	115
15 years and under 20 years ..	..	..	..	5	3	8	3	1	4	78	45	123
20 years and over .. .. .	..	..	..	..	2	2	5	4	9	138	64	202
Totals .. .. .	..	..	..	382	468	850	86	69	155	1,203	759	1,962

TABLE LXXVII—continued

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

TOOWOOMBA SPECIAL HOSPITAL

Age Groups	Admissions			Discharges			Deaths			Remaining		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 5 years .. ..	..	1	1	..	..	..	..	..	..	1	3	4
5 years and under 10 years ..	1	..	1	..	..	..	..	..	..	5	3	8
10 years and under 15 years ..	..	3	3	..	1	1	..	..	..	5	13	18
15 years and under 20 years ..	7	7	14	9	5	14	..	..	..	26	21	47
20 years and under 25 years ..	15	16	31	9	14	23	2	..	2	11	14	25
25 years and under 30 years ..	9	13	22	11	21	32	..	..	..	20	10	30
30 years and under 35 years ..	15	21	36	17	22	39	..	..	..	42	28	70
35 years and under 40 years ..	12	33	45	13	28	41	..	..	..	35	50	85
40 years and under 45 years ..	19	23	42	18	23	41	1	2	3	40	44	84
45 years and under 50 years ..	14	33	47	10	26	36	1	..	1	67	64	131
50 years and under 55 years ..	14	16	30	6	21	27	1	1	2	77	37	114
55 years and under 60 years ..	10	21	31	15	12	27	6	5	11	135	142	277
60 years and under 65 years ..	14	19	33	16	32	48	5	1	6	42	14	56
65 years and under 70 years ..	5	4	9	7	10	17	4	1	5	28	22	50
70 years and under 75 years ..	3	12	15	6	7	13	3	2	5	21	11	32
75 years and under 80 years ..	7	2	9	2	6	8	4	2	6	16	6	22
80 years and under 85 years ..	6	5	11	1	1	2	5	3	8	6	5	11
85 years and under 90 years ..	4	1	5	..	..	..	2	1	3	3	1	4
90 years and under 95 years ..	1	2	3	1	1	2	..	..	..	..	1	1
95 years and under 100 years ..	..	..	..	..	..	..	..	..	..	..	..	..
Unknown	1	4	5	..	1	1	..	..	..	3	3	6
Totals	157	236	393	141	231	372	34	18	52	583	492	1,075

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Single	63	37	100	70	43	113	16	7	23	483	295	778
Married	77	160	237	61	158	219	13	5	18	63	165	228
Separated .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Widowed	12	31	43	8	26	34	2	5	7	9	16	25
Divorced	2	7	9	..	4	4	2	1	3	8	11	19
Unknown	3	1	4	2	..	2	1	..	1	20	5	25
Totals	157	236	393	141	231	372	34	18	52	583	492	1,075

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR, AND OF THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Under 1 month .. ..	..	..	..	32	32	64	10	4	14	15	17	32
1 month and under 3 months ..	..	..	..	37	92	129	2	2	4	18	18	36
3 months and under 6 months ..	..	..	..	26	47	73	..	..	..	18	23	41
6 months and under 9 months ..	..	..	..	12	15	27	3	..	3	21	5	26
9 months and under 12 months ..	..	..	..	9	6	15	1	1	2	14	7	21
1 year and under 2 years ..	..	..	..	10	12	22	..	3	3	71	54	125
2 years and under 3 years ..	..	..	..	4	6	10	1	2	3	15	23	38
3 years and under 5 years ..	..	..	..	1	2	3	1	1	2	33	32	65
5 years and under 7 years ..	..	..	..	..	..	..	..	1	1	29	23	52
7 years and under 10 years ..	..	..	..	3	1	4	2	..	2	35	41	76
10 years and under 12 years ..	..	..	..	..	..	..	..	..	..	36	24	60
12 years and under 15 years ..	..	..	..	2	2	4	1	..	1	40	25	65
15 years and under 20 years ..	..	..	..	..	5	5	1	1	2	60	54	114
20 years and over .. ..	..	..	..	5	11	16	12	3	15	178	146	324
Totals .. ..	..	..	..	141	231	372	34	18	52	583	492	1,075

TABLE LXXVII—continued

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

IPSWICH SPECIAL HOSPITAL

Age Groups	Admissions			Discharges			Deaths			Remaining		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 5 years	8	10	18	..	7	7	3	3	6	14	19	33
5 years and under 10 years ..	8	6	14	4	4	8	1	..	1	31	23	54
10 years and under 15 years ..	2	..	2	1	..	1	3	1	4	33	18	51
15 years and under 20 years ..	2	..	2	..	1	1	2	1	3	21	21	42
20 years and under 25 years ..	2	..	2	1	..	1	1	1	2	22	18	40
25 years and under 30 years ..	2	..	2	2	..	2	1	1	2	23	14	37
30 years and under 35 years ..	3	..	3	2	..	2	..	..	..	21	15	36
35 years and under 40 years ..	3	..	3	2	..	2	..	..	..	19	17	36
40 years and under 45 years ..	3	..	3	..	..	..	..	..	..	14	17	31
45 years and under 50 years ..	..	..	..	1	1	2	..	..	..	13	25	38
50 years and under 55 years ..	1	..	1	2	1	3	1	2	3	14	25	39
55 years and under 60 years ..	..	..	..	..	..	..	1	1	2	23	20	43
60 years and under 65 years ..	..	..	..	..	..	..	1	1	2	18	21	39
65 years and under 70 years ..	..	..	..	..	..	..	..	2	2	16	17	33
70 years and under 75 years ..	1	..	1	..	..	..	1	2	3	14	9	23
75 years and under 80 years ..	..	..	..	..	..	..	1	..	1	5	4	9
80 years and under 85 years ..	..	..	..	..	..	..	..	1	1	6	5	11
85 years and under 90 years ..	..	..	..	..	..	..	..	..	..	1	1	2
90 years and under 95 years ..	..	..	..	..	..	..	..	..	..	..	..	..
95 years and under 100 years ..	..	..	..	..	..	..	..	..	..	..	..	..
Unknown .. .. .	..	..	..	..	..	..	..	..	..	..	..	..
Totals	35	16	51	15	14	29	16	16	32	308	289	597

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Single	29	16	45	11	13	24	15	11	26	269	223	492
Married	4	..	4	3	1	4	1	..	1	24	39	63
Separated	1	..	1	..	..	..	..	..	..	2	3	5
Widowed	1	..	1	1	..	1	..	2	2	5	17	22
Divorced .. .. .	..	..	..	..	..	..	..	2	2	5	7	12
Unknown .. .. .	..	..	..	..	..	..	..	1	1	3	..	3
Totals	35	16	51	15	14	29	16	16	32	308	289	597

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR, AND OF THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Under 1 month .. .. .	..	..	..	2	1	3	3	..	3	2	2	4
1 month and under 3 months ..	..	..	..	1	2	3	..	1	1	2	3	5
3 months and under 6 months ..	..	..	..	1	1	2	..	1	1	10	..	10
6 months and under 9 months ..	..	..	..	1	1	2	1	..	1	7	3	10
9 months and under 12 months ..	..	..	..	1	1	2	..	1	1	8	4	12
1 year and under 2 years ..	..	..	..	6	3	9	1	..	1	20	23	43
2 years and under 3 years ..	..	..	..	2	1	3	2	..	2	26	9	35
3 years and under 5 years ..	..	..	..	1	3	4	1	1	2	26	60	86
5 years and under 7 years ..	..	..	..	..	..	..	1	2	3	26	81	107
7 years and under 10 years ..	..	..	..	..	..	..	1	1	2	34	18	52
10 years and under 12 years ..	..	..	..	..	..	..	1	1	2	17	6	23
12 years and under 15 years ..	..	..	..	..	1	1	1	2	3	35	17	52
15 years and under 20 years ..	..	..	..	..	..	..	..	1	1	25	18	43
20 years and over .. .. .	..	..	..	..	..	..	4	5	9	70	45	115
Totals .. .. .	..	..	..	15	14	29	16	16	32	308	289	597

TABLE LXXVII—continued

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES
AND DEATHS OCCURRED DURING THE YEAR AND THOSE WHO
REMAINED IN HOSPITAL ON 30TH JUNE, 1966

MOSMAN HALL SPECIAL HOSPITAL

Age Groups	Admis- sions	Dis- charges	Deaths	Re- maining
Under 5 years .. ..	..	..	..	..
5 years and under 10 years ..	..	..	..	..
10 years and under 15 years ..	1	..	..	2
15 years and under 20 years ..	4	1	..	8
20 years and under 25 years ..	6	4	..	9
25 years and under 30 years ..	5	11	..	12
30 years and under 35 years ..	16	9	..	17
35 years and under 40 years ..	19	18	..	19
40 years and under 45 years ..	22	27	1	23
45 years and under 50 years ..	12	10	1	33
50 years and under 55 years ..	16	13	..	19
55 years and under 60 years ..	10	10	..	32
60 years and under 65 years ..	6	12	2	23
65 years and under 70 years ..	3	1	2	17
70 years and under 75 years ..	6	..	2	11
75 years and under 80 years ..	4	..	3	10
80 years and under 85 years ..	3	1	2	3
85 years and under 90 years ..	2	..	..	3
90 years and under 95 years ..	2	2	1	..
95 years and under 100 years ..	..	..	..	..
Unknown .. ..	..	..	..	..
Totals	137	119	14	241

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND
DEATHS OCCURRED DURING THE YEAR AND THOSE WHO
REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Single	80	71	5	189
Married	36	29	5	30
Separated	5	3	1	5
Widowed	9	11	2	8
Divorced	7	5	..	5
Unknown .. ..	..	..	1	4
Totals	137	119	14	241

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO
WERE DISCHARGED OR WHO DIED DURING THE YEAR, AND OF
THOSE WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1966

Under 1 month .. ..	..	30	5	9
1 month and under 3 months ..	..	43	..	14
3 months and under 6 months ..	..	16	..	16
6 months and under 9 months ..	..	10	2	7
9 months and under 12 months ..	..	5	..	6
1 year and under 2 years ..	..	6	1	16
2 years and under 3 years ..	..	2	1	16
3 years and under 5 years ..	..	2	1	24
5 years and under 7 years ..	..	1	..	16
7 years and under 10 years ..	..	1	1	26
10 years and under 12 years ..	..	1	..	29
12 years and under 15 years ..	..	..	..	15
15 years and under 20 years ..	..	2	..	15
20 years and over .. ..	..	..	3	32
Totals .. ..	..	119	14	241

TABLE LXXVIII.

ADMISSIONS, DISCHARGES AND DEATHS AT THE WACOL REPATRIATION PAVILION DURING THE YEAR ENDED 30TH JUNE, 1966

Total number of patients on books as at 30th June, 1965	116	Total number of patients on books as at 30th June, 1966	117
Transferred from Brisbane Special Hospital ..	60	Total number of patients on leave as at 30th June, 1966	8
Transferred from the Repatriation General Hospital	36	Total number of patients in residence as at 30th June, 1966	109
Transferred from Rosemount Repatriation Hospital	1	Average number of patients daily resident ..	101
Admitted	4		
	217		
Discharged, relieved	46		
Discharged, not improved	14		
Deaths	5		
Transferred to Brisbane Special Hospital ..	34		
Transferred to Gowrie Hall, Toowoomba ..	1		
	100		

TABLE LXXIX

EXPENDITURE TABLE FOR THE FINANCIAL YEAR ENDED 30TH JUNE, 1966

	Brisbane Special Hospital	Toowoomba Special Hospital	Ipswich Special Hospital	Mosman Hall Charters Towers	Total and Average Costs
Average Number Daily Resident	1,704	1,003	611	218	3,536
Total Expenditure	\$ 2,861,735	\$ 1,387,941	\$ 1,055,521	\$ 396,121	\$ 5,701,318
Less—					
Sales	6,309	2,121	3,632	1,554	13,616
Collections	188,635	11,105	3,615	3,344	206,699
Payments by Commonwealth—					
(a) Pharmaceutical Benefits ..	26,309	16,141	9,989	3,416	55,855
(b) Capital Subsidy	7,750	2,711	2,092	373	12,926
	229,003	32,078	19,328	8,687	289,096
Net Expenditure	2,632,732	1,355,863	1,036,193	387,434	5,412,222
Gross Cost per patient per annum ..	1,679	1,384	1,728	1,817	1,612
Net Cost per patient per annum ..	1,545	1,352	1,696	1,777	1,531
Gross Cost per patient per week ..	32.29	26.61	33.23	34.94	31.00
Net Cost per patient per week ..	29.71	26.00	32.62	34.17	29.44

TABLE LXXX

STATEMENT SHOWING EXPENDITURE BY THE DEPARTMENT OF WORKS AT SPECIAL HOSPITALS AND THE EPILEPTIC HOME DURING THE FINANCIAL YEAR 1965-66

Place	Expenditure 1965-66		
	Revenue Fund	Loan Fund	Total
	\$	\$	\$
Special Hospitals—			
Brisbane (excluding Expenditure of Repatriation Hospital, Goodna)	80,065.49	242,098.99	322,164.48
Charters Towers	8,303.87	3,374.41	11,678.28
Ipswich	4,146.43	17,298.15	21,444.58
Toowoomba	5,713.13	86,755.00	92,468.13
Epileptic Home, Toowoomba	1,576.41	12,929.58	14,505.99
Totals	99,805.33	362,456.13	462,261.46

DETAILS OF EXPENDITURE ON MAJOR WORKS

	\$
Special Hospitals—	
Brisbane	Plumbing Repairs and Painting Male Ward 11
	Painting, Repairs, Repositioning Female Ward 11
	Internal Painting Female Ward 5
	Erection New Farm Unit to replace Farm Ward 17
	Provision of Fire Escapes
	Erection Training Centre for Subnormal Children
Charters Towers	External painting various wards
Ipswich	Re-roofing to Hospital Ward
Toowoomba	Provision of street lighting
	Erection of Additions and alterations to Hospital Ward
Toowoomba Epileptic Home ..	Re-roofing of Home
	Provision for additional space to Ward and lino

TABLE LXXXI
PSYCHIATRY CLINIC

1. SUMMARY OF NEW PATIENTS REGISTERED DURING THE YEAR 1965-1966

	Under 18		18-19		20-29		30-39		40-49		50-59		60 and over		Total		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1. Senile and pre-senile dementia ..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	4	4
2. Alcoholic psychosis .. ..	..	..	..	..	..	..	..	..	1	1	..	..	1	..	2	1	3
3. Other organic psychoses ..	..	..	..	..	1	..	..	..	2	..	..	2	2	4	5	6	11
4. Schizophrenia and paranoid states ..	4	1	5	3	22	10	15	17	15	15	5	17	3	4	69	67	136
5. Depressive psychoses .. ..	..	..	..	..	1	..	2	..	..	3	..	5	2	2	5	10	15
6. Other functional psychoses ..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2	2
7. Depressive neurosis	1	4	..	3	6	13	10	27	7	21	4	8	4	10	32	86	118
8. Other neuroses and psychosomatic disorders	1	3	1	13	8	22	4	30	12	18	2	6	2	5	30	97	127
9. Alcoholism .. ..	..	..	..	..	2	..	6	2	17	2	9	2	2	..	36	6	42
10. Other personality disorders ..	8	5	12	7	31	11	12	6	15	5	3	2	2	1	83	37	120
11. Transient situational disturbances and behaviour disorders of children ..	1	3	..	1	1	..	..	..	1	1	..	..	..	..	3	5	8
12. Non-psychotic mental disorders associated with physical conditions ..	1	2	1	..	3	3	3	1	2	2	1	..	..	..	11	8	19
13. Mental retardation	4	2	3	2	5	1	2	1	4	1	..	..	1	..	19	7	26
14. No psychiatric diagnosis (includes observation, &c.)	2	1	2	1	3	4	3	1	1	1	2	..	..	..	13	8	21
Totals	22	21	24	30	83	64	57	85	77	70	26	44	19	30	308	344	652

SOURCES OF REFERRAL OF PATIENTS TO PSYCHIATRY CLINIC, YEAR ENDED 30TH JUNE, 1966

									Male		Female		Total	
Self referrals .. ..	..	..	..	..	..	..	..	..	82		107		189	
Special Hospitals—ex and on leave ..	..	..	..	..	..	..	..	..	82		101		183	
Medical Practitioners—														
Psychiatrists .. ..	..	..	..	..	..	..	..	..	6		14		20	
Others .. ..	..	..	..	..	..	..	..	..	18		33		51	
Commonwealth Government Departments ..	..	..	..	..	..	..	..	..	7		5		12	
State Government Departments—														
Health—														
Maternal and Child Welfare ..	..	..	..	..	..	..	..	..	..		18		18	
School Health Services ..	..	..	..	..	..	..	..	..	4		9		13	
Youth Welfare and Guidance ..	..	..	..	..	..	..	..	..	9		16		25	
Wacol Rehabilitation Clinic ..	..	..	..	..	..	..	..	..	21		..		21	
Other .. ..	..	..	..	..	..	..	..	..	7		13		20	
Justice .. ..	..	..	..	..	..	..	..	..	42		3		45	
Other .. ..	..	..	..	..	..	..	..	..	1		3		4	
Public Hospitals—														
Chermside Neuro-Psychiatric Unit ..	..	..	..	..	..	..	..	..	3		8		11	
Other .. ..	..	..	..	..	..	..	..	..	9		6		15	
Church .. ..	..	..	..	..	..	..	..	..	8		4		12	
Other .. ..	..	..	..	..	..	..	..	..	9		4		13	
Totals .. ..	..	..	..	..	..	..	..	..	308		344		652	

TABLE LXXXII
[PSYCHIATRY CLINIC]

2. SUMMARY OF PATIENTS CONTINUING IN TREATMENT FROM THE PREVIOUS YEAR, 1964-1965, INTO THE CURRENT YEAR, 1965-1966

	Under 18		18-19		20-29		30-39		40-49		50-59		60 and over		Total		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1. Senile and pre-senile dementia	1	2	4	2	5	7
2. Alcoholic psychosis	1	3	..	..	1	3	4
3. Other organic psychoses	1	..	..	..	2	..	1	..	..	..	3	1	4
4. Schizophrenia and paranoid states	1	3	24	18	48	50	25	81	17	52	11	21	126	225	351
5. Depressive psychoses	1	2	9	4	11	4	18	10	39	49
6. Other functional psychoses	2	..	..	2	..	4	3	5	5	11	16
7. Depressive neurosis	4	2	4	8	27	5	37	11	36	6	26	32	134	166
8. Other neuroses and psychosomatic disorders	2	8	7	41	9	32	13	24	3	5	34	110	144
9. Alcoholism	1	2	2	2	2	1	1	1	6	6	12
10. Other personality disorders	2	..	4	3	30	16	13	9	5	7	4	1	6	2	64	38	102
11. Transient situational disturbances and behaviour disorders of children	1	..	..	..	..	..	..	..	..	..	..	..	1	1
12. Non-psychotic mental disorders associated with physical conditions	2	..	1	4	5	1	2	2	3	..	1	..	14	7	21
13. Mental retardation	2	3	8	6	2	3	2	3	1	..	..	..	15	15	30
14. No psychiatric diagnosis (includes observation, &c.)	2	..	1	..	..	..	..	..	..	..	..	..	3	3
Totals	2	..	9	16	67	58	86	134	54	175	57	133	37	82	312	598	910

TABLE LXXXIII
[PSYCHIATRY CLINIC]
3. SUMMARY OF PATIENTS DISCHARGED IN PREVIOUS YEARS WHO HAVE RECEIVED TREATMENT IN THE CURRENT YEAR,
1965-1966

	Under 18		18-19		20-29		30-39		40-49		50-59		60 and over		Total		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1. Senile and pre-senile dementia	2	..	2	2
2. Alcoholic psychosis
3. Other organic psychoses	1	1	..	..	1	..	..	..	2	1	3
4. Schizophrenia and paranoid states	9	8	15	19	8	18	3	15	..	2	35	62	97
5. Depressive psychoses	1	2	1	2	2	2	4	6	10
6. Other functional psychoses	3	..	3	..	1	..	7	7
7. Depressive neurosis	2	..	2	4	2	4	3	9	1	3	10	20	30
8. Other neuroses and psychosomatic disorders	1	2	3	2	8	8	1	3	1	1	14	16	30
9. Alcoholism	2	1	1	..	5	..	1	1	9	2	11
10. Other personality disorders	4	1	12	5	8	5	3	3	..	2	1	..	28	16	44
11. Transient situational disturbances and behaviour disorders of children	1	..	..	..	..	..	..	..	..	..	..	..	1	1
12. Non-psychotic mental disorders associated with physical conditions	1	1	..	1	..	1	..	..	..	..	1	3	4
13. Mental retardation	1	..	..	..	6	1	1	1	..	2	..	1	..	..	8	5	13
14. No psychiatric diagnosis (includes observation, &c.)	1	1	..	..	..	..	1	1	2
Total	1	..	4	2	31	17	32	34	24	42	14	35	6	12	112	142	254

TABLE LXXXIV
PSYCHIATRY CLINIC
4. FORENSIC CASES—(ALREADY INCLUDED IN PREVIOUS TABLES)

				Under 18		18-19		20-29		30-39		40-49		50-59		60 and over		Total		Total
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
<i>Probation Office and Police Referrals</i>																				
4. Schizophrenia and paranoid states	..	..	..	..	..	3	1	2	..	..	..	..	..	..	..	..	5	1	6
7. Depressive neurosis	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	2	..	2
10. Other personality disorders	..	..	..	4	1	13	..	3	..	..	..	1	..	1	..	..	22	1	23
12. Non-psychotic mental disorders associated with physical conditions	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
13. Mental retardation	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	2	..	2
14. No psychiatric diagnosis (includes observation, &c.)	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Total	1	4	2	19	1	6	1	..	1	..	31	4	35
<i>Public Defender</i>																				
4. Schizophrenia and paranoid states	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1
8. Other neuroses and psychosomatic disorders	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	2
10. Other personality disorders	..	..	..	1	..	3	..	2	..	3	..	..	..	..	..	..	9	..	9
13. Mental retardation	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	2	..	2
14. No psychiatric diagnosis (includes observation, &c.)	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	2
Total	..	..	..	..	1	..	1	..	4	1	2	..	7	..	..	..	15	1	16
<i>Supreme and District Court Pre-Sentence Reports</i>																				
10. Other personality disorders	..	..	..	2	..	3	..	2	..	1	..	1	..	..	..	..	9	..	9
13. Mental retardation	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	3	..	3
Total	..	..	..	..	..	3	..	3	..	1	..	2	..	..	..	..	12	..	12
<i>Examined by Order of Executive Council</i>																				
4. Schizophrenia and paranoid states	..	..	..	..	..	..	..	1	2	..	..	..	..	1	..	..	3	1	4
10. Other personality disorders	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	3	..	3
13. Mental retardation	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	1	2
Total	..	..	..	..	..	1	..	3	2	2	..	..	..	1	..	..	7	2	9
<i>Parole Board</i>																				
4. Schizophrenia and paranoid states	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	2	..	2
10. Other personality disorders	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
14. No psychiatric diagnosis (includes observation, &c.)	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Total	..	..	1	..	1	..	..	..	2	..	..	..	..	..	..	..	4	..	4
<i>Her Majesty's Prison Classification Committee</i>																				
10. Other personality disorders	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1
12. Non-psychotic mental disorders associated with physical conditions	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2	..	2
Total	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	3	..	3
<i>Prisons Department Research Programme—Homosexuality</i>																				
10. Other personality disorders	Total	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Grand Total	..	4	1	9	2	32	2	12	2	13	..	1	..	2	..	73	7	80		

TOTAL NUMBER OF ALL PATIENTS WHO HAVE RECEIVED TREATMENT DURING THE YEAR 1965-1966

TABLE LXXXI	..	..	..	..	..	..	..	..	652
TABLE LXXXII	..	..	..	..	..	..	..	..	910
TABLE LXXXIII	..	..	..	..	..	..	..	..	254
Grand Total	..	..	..	..	..	..	..	..	1,816

CONSULTATIONS

Psychiatric	..	..	..	..	..	..	..	..	7,670
Speech Therapy	..	..	..	..	..	..	..	..	816
Social Work	..	..	..	..	..	..	..	..	500
Grand Total	..	..	..	..	..	..	..	..	8,986

REFERRAL OF PATIENTS TO OTHER PSYCHIATRIC UNITS DURING THE YEAR 1965-1966

Special Hospitals	..	..	..	..	..	..	..	..	51
Lowson House	..	..	..	..	..	..	..	..	31
Chermside Neuro-Psychiatric Unit				..	..	..	..	..	38
Total	..	..	..	..	..	..	..	..	120

TABLE LXXXV

MENTAL HEALTH REVIEW TRIBUNAL

STATISTICS FOR YEAR ENDED 30TH JUNE, 1966

Applications made to the Mental Health Review Tribunal during the year by—

Patients	..	..	..	..	..	..	..	..	24
Nearest relatives of patients	..	..	..	..	..	..	..	..	3
									27

Disposal of applications—

1. Applications adjourned during previous year—

Application refused	..	..	..	..	..	..	..	..	1
No further action by Tribunal	..	..	..	..	..	..	..	..	1
									2

2. Applications heard by Tribunal (including 5 applications made during previous year and not heard as at 1st July, 1965)

Refused	..	..	..	..	..	..	..	..	22
Recommendation for discharge	..	..	..	..	..	..	..	..	2
Hearing adjourned	..	..	..	..	..	..	..	..	2
									26

3. Applications not heard—

Applicant did not appear	..	..	..	..	..	..	..	..	1
Applications withdrawn	..	..	..	..	..	..	..	..	2
Awaiting hearing	..	..	..	..	..	..	..	..	5
									8

TABLE LXXXVI

POPULATION CHANGES AT EPILEPTIC HOME DURING THE YEAR 1965-66

PATIENTS AT 30TH JUNE, 1965: MALES 50; FEMALES 54; TOTAL 104

FOR THE YEAR ENDED 30TH JUNE, 1966

Aged				Admitted		Discharged		Special Hospital		Deaths		Remaining		
				Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
Under 5 years	..	..	..	..	..	..	..	..	..	..	..	1	..	1
5-10	..	..	..	..	..	..	..	..	..	..	..	1	1	2
10-15	..	..	..	..	..	..	..	..	..	..	..	6	5	11
15-20	..	..	..	..	..	..	..	1	..	..	..	6	8	14
20-25	..	..	..	..	..	..	..	..	..	..	..	11	2	13
25-30	..	..	..	1	..	..	..	..	..	..	..	2	8	10
30-35	..	..	..	..	..	..	..	..	..	..	..	7	3	10
35-40	..	..	..	..	1	..	..	..	1	..	..	5	3	8
40-45	..	..	..	..	..	..	..	..	..	..	..	1	7	8
45-50	..	..	..	..	..	..	..	..	..	1	1	1	4	5
50-55	..	..	..	..	..	..	..	..	..	..	..	6	5	11
55-60	..	..	..	..	..	..	..	..	..	..	..	2	4	6
60-65	..	..	..	..	1	..	..	..	..	..	..	..	3	3
65-70	..	..	..	..	..	..	..	..	..	..	..	..	1	1
70-75	..	..	..	..	..	..	..	1	..	..	..	..	..	..
75-80	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Totals	..	..	..	2	2	..	..	2	1	1	1	49	54	103

Patients' Residence—								
Under 5 years	..	..	..	..	..	..	..	19
5–10 years	..	..	..	..	..	..	..	22
10–15 years	..	..	..	..	..	..	..	18
15–20 years	..	..	..	..	..	..	..	19
Over 20 years	..	..	..	..	..	..	..	25
Average daily number resident		..	..	..	..	..	..	99

Cause of Death—	
Male aged 51 years	—Cerebral Thrombosis
	Epilepsy
	Congenital Mental Deficiency
Female aged 51 years	—Status Epilepticus
	Hemiplegia

EXPENDITURE TABLE, EPILEPTIC HOME, FOR THE TWELVE MONTHS ENDED 30TH JUNE, 1966
Average Number Daily Resident—99

									\$
Gross Expenditure	..	..	..	..	..	..	..	..	104,158
Collections	..	..	..	..	..	..	..	..	42,020
Net Expenditure	..	..	..	..	..	..	..	..	62,138
Gross Cost per patient per annum			..	..	..	..	..	..	1,052
Net Cost per patient per annum	..		..	..	..	..	..	..	628
Gross Cost per patient per week	..		..	..	..	..	..	..	20.23
Net Cost per patient per week	..		..	..	..	..	..	..	12.08

DIVISION OF WELFARE AND GUIDANCE

Senior Medical Director: B. J. PHILLIPS, M.B., B.S. (Qld.), D.P.M. (Lond.)

Medical Director: B. NURCOMBE, M.B., B.S. (Qld.), D.P.M. (Melb.)

Medical Director: B. KLUG, M.B., B.S. (Qld.), D.P.M. (Melb.)

Medical Officer: J. FOLEY, M.B., B.S. (Qld.)

Medical Officer: A. B. SHEARER, M.B., B.S. (Qld.), M.R.C.P. (Lond.)

The Division of Welfare and Guidance has increased its treatment facilities during the financial year with the opening of the Institute of Child Guidance at Rogers Street, Spring Hill. Outpatient and day hospital facilities are now operating at the Institute, and this is providing a wider coverage of treatment of emotionally disturbed children.

The Institute which was opened on 6th April was established in co-operation with the North Brisbane Hospitals Board, and the officers of the Board helped, to a considerable extent, in creating this unique institution. As a result of this combined effort the officers of the Division of Welfare and Guidance now have excellent conditions of work in the Outpatient and Day Hospital Sections of the Institute. It also means that more intensive treatment of school children for emotional disturbance is now possible. Plans for the creation of facilities for inpatients are laid, and this will be attended to at a later stage.

STAFF

During the financial year Dr. M. I. Lamb resigned from the full-time medical staff to return later in a part-time capacity. It has not been possible to fill a vacancy for a full-time medical officer with the Division of Welfare and Guidance.

It is expected to open the Child Guidance Centre at Townsville when a trained specialist is available.

Two new speech therapists were appointed and one resigned. Difficulty has been experienced in obtaining a speech therapist at Toowoomba. Two remedial teachers were appointed to help in the treatment of emotionally disturbed children.

OVERALL SUMMARY

A total of 24,906 examinations, interviews and testing interviews were carried out by the professional staff.

Child guidance does not merely involve the treatment of a particular child in isolation; the whole family is involved in treatment, and some other family members are interviewed and counselled. As has often been pointed out before, child guidance is really family guidance—child centred.

The Division of Welfare and Guidance has been organized during the year into several centres. These centres comprise the following:—The Mary Street Centre, which includes the central office; The Institute of Child Guidance; The Wilson Youth Hospital Centre; The Warilda Home Centre; The Toowoomba Child Guidance Centre; and the Townsville Child Guidance Centre (proposed).

MARY STREET CHILD GUIDANCE CENTRE

This year the number of new cases seen was 1,109 and of this number 741 were boys and 368 were girls. Most of the children seen were in the school age group. This is shown in Table LXXXIII, showing school attended or employment followed by patients, and also Table XC showing the ages of new patients admitted to the centres.

The areas from which children come to the Mary Street Clinic are shown in Table LXXXVII. The Institute of Child Guidance has only been functioning for a few months, and the figures from next year will show the distribution of areas from which patients go to all Child Guidance Centres.

The large number of referrals to Mary Street Centre from Church Homes is likely to be diminished, as a special service has now been created for State children which will cope with the treatment of children in Church Homes.

The reasons for children being referred to the clinic are shown in Table XCIII and it will be seen that they are referred for the usual reasons.

The actual clinical diagnosis of children seen at Mary Street Clinic is given in Table XCIV and again it must be pointed out that a particular case may have more than one disorder and more than one diagnosis, e.g. a child may have an organic disorder with a speech defect and a psychological disorder.

As in previous years, the figures indicate that child guidance work exists very largely in treating emotional and behaviour disorders in children which are quite often due to a complicated interplay of biological, psychological, and environmental factors.

Some of the staff from Mary Street Centre have moved to the Institute of Child Guidance, and there has been a complete rearrangement of working conditions.

THE E.E.G. SECTION

Last year there were 831 E.E.G. investigations performed by the staff. Most of the patients involved were children referred by doctors of the Welfare and Guidance Clinics. Details of the E.E.G. investigations are shown in Table XCI. It can be seen that in a Child Guidance Clinic there are a considerable number of abnormalities revealed by the E.E.G. It often happens that abnormalities revealed by the E.E.G. and treated with modern drugs can produce a dramatic change in the child's behaviour. We look upon the E.E.G. as an essential investigatory aid in a Child Guidance Clinic.

THE INSTITUTE OF CHILD GUIDANCE

The Institute of Child Guidance has only been functioning for a few months of this financial year, and it replaces the temporary Child Guidance Clinic which was at the Children's Hospital. Not only is the same service offered to the Brisbane Children's Hospital but a more extensive one is now available.

Child guidance specialists from the Institute of Child Guidance visit the Children's Hospital regularly for ward consultations, and any psychological testing of patients in the Children's Hospital is done by the clinical psychologists of the Institute of Child Guidance. Other facilities at the Institute of Child Guidance are available to the Children's Hospital.

The number of cases seen at the Institute of Child Guidance is indicated in the Tables. The Day Hospital Section of the Institute has commenced but is, as yet, not working at full capacity as a complete staff has not yet been appointed. Again, it will need a full year's work before the capacity of the Day Hospital can be accurately measured.

Day hospital treatment of children with emotional disturbance so far indicates that it is a very promising form of treatment, and it would not be surprising if this form of treatment figures more and more in the organization of Child Guidance Clinics in the future. There are still, however, a considerable number of children who are too disturbed to be treated in a day hospital situation, and when the Inpatient Section of the Institute is complete, the facilities will be very much appreciated.

The Child Guidance Clinic which has been carried on for the last few years in a temporary fashion at the Children's Hospital did a considerable amount of work, and a good deal of beneficial liaison was established by this Clinic which, no doubt, will be carried on at the Institute of Child Guidance. The work done during the year at the Child Guidance Clinic at the Children's Hospital up till the time of transfer to the Institute of Child Guidance is shown in Table LXXXIX.

WILSON YOUTH HOSPITAL CENTRE

The Welfare and Guidance Clinic staff at the Wilson Youth Hospital Centre sees children who are referred by the Children's Court Magistrate, the probation service to the Court, and children who are referred by the Director of the Children's Services Department. The medical staff also is responsible for the treatment of children in Wilson Youth Hospital, and visits Church Homes which care for children who have previously been in Wilson Youth Hospital or Westbrook Training Centre. The staff also visits Westbrook Training Centre and Karrala House at Ipswich for the assessment and follow-up of children who have been before the Children's Court.

During the year the administrative responsibility for the Inpatient care and custody of the boys in Wilson Hospital was transferred to the Children's Services Department. The Division of Welfare and Guidance however, is responsible for the clinical care and treatment. The data concerning the children who have been treated by the Wilson Centre appears in the tables. It will be noted, of course, that most of them are teenagers and of the type usually referred to as juvenile delinquents. However, there are some children who are behaviour problems and who are treated by the Wilson Hospital Outpatient Department but who would not be classified in this way.

Children in Wilson Youth Hospital, at Westbrook, and the Church Homes caring for delinquents are, of course, committed into the care of the Director of the Children's Services Department by the Children's Court Magistrate, so they would have appeared before the Children's Court.

There are some children who have been in these institutions but are now discharged and under supervision of the Welfare Officers of the Children's Services Department. Some of these children are attending the Wilson Hospital Out-patients for treatment.

The number of boys admitted to Wilson Youth Hospital shows an increased percentage of emotional disturbance, and many very disturbed boys are treated there. The psychiatric diagnoses of the children treated by the Wilson Youth Hospital Centre can be seen in the tables.

“WARILDA” HOME CENTRE

Because of the large number of State Children and children in Children's Homes who are emotionally disturbed, it was decided to make a special team for the treatment of these children. The team will be centred at Woolloowin Home ultimately when accommodation is available, but at the moment it is temporarily at 30 Mary Street, Brisbane.

It is considered desirable that the medical officer should visit the various institutions and see the children in their Home surroundings. There is also a preventive mental health aspect of this as the doctor spends a certain amount of time discussing with the Home staff problems in handling children and similar topics. It is also desirable that the doctor visit the Church Home for economic reasons, as it will save the Church Home Authorities and the Department of Children's services time and expense in transport. The “Warilda” Home Centre medical officer visits the majority of Homes in the Brisbane area that are likely to have emotionally disturbed children. Not all of the Homes concerned are for State Children; for example, the medical officer also visits the Bush Children's Health Scheme Home at Redcliffe.

Details of the work done by the “Warilda” Home Centre can be seen in the tables. We consider that this is a very important section in the mental health programme for children.

TOOWOOMBA CHILD GUIDANCE CENTRE

The Toowoomba Child Guidance Centre has been functioning in a part-time capacity for some time. Medical officers visit the Centre from Brisbane and, at the Centre, see cases from the Toowoomba area. When the psychiatrist is in Toowoomba he also visits Westbrook Training Centre for consultations and assessments. Recently, a speech therapist was appointed to the Toowoomba Welfare and Guidance Centre and seconded to the Toowoomba General Hospital, but the position has not been filled.

It is hoped that the Toowoomba Child Guidance Centre can be expanded into a fully functioning one in the near future. It can be seen from the tables that the cases seen at the Toowoomba Centre are similar to those at the Mary Street Centre.

MENTAL HEALTH ACTIVITIES

The mental health of children and adolescents is the responsibility of the Division of Welfare and Guidance and this is accepted in the following way:—

Services to Kindergartens

A member of the medical staff visits the kindergartens one morning per week and this has been proven a valuable mental health procedure as, during the visit, there is discussion

with mothers and the Kindergarten Directors on the problems of children, and particularly the problems of disturbed children. No treatment is conducted at the kindergarten but, with the mother's consent, the child can be brought to a clinic for treatment. The Kindergarten Directors have found these visits very helpful, and the discussion groups by mothers have been well attended.

School Health Survey

The sisters of the School Health Services examine school children for physical and mental abnormalities. The Chief Medical Officer of the School Health Services and the Senior Medical Director of the Welfare and Guidance Clinics have designed a form which will bring to the sisters' notice mental and emotional abnormalities in children. These children are brought to the School Health Services office where a doctor from the Welfare and Guidance Clinic does a rapid screening of the children referred. Further reference is then to the family doctor, to a social worker, or to the Welfare and Guidance Clinic.

Other mental health activities include the visits to Church Homes and discussions with Church Home authorities and the teaching of Clergy, welfare officers, and other persons concerned with children.

The Division of Welfare and Guidance is accumulating a considerable amount of statistical data on the mental state of children. This should lead to various educative measures in family care in the future.

Lectures to groups of parents and television talks which have been delivered during the year have aimed at awakening parents to abnormalities in their children, and indicating when and how these abnormalities can be treated. Early detection and treatment is one of the main activities of a preventive health programme.

Teaching Activities

The officers of the Division of Welfare and Guidance do a considerable amount of teaching.

Recently, a three-year In-service Training Course for personnel of the Division of Welfare and Guidance has been instituted. Fortunately the medical staff have had special training in various areas.

Undergraduates of the University from the following faculties have attended our clinics for instruction:—Medicine, Social Studies, Psychology, Speech Therapy, Occupational Therapy and Education.

Courses for Clergy, Welfare Officers and other people concerned in the care of children have been conducted during the year.

ACKNOWLEDGMENTS

Appreciation of the co-operation received from various Government Departments, both Commonwealth and State, the various Departments of the University of Queensland, representatives of the Churches and Church Homes for Children is made to all concerned.

TABLE LXXXVII
SHOWING AREAS FROM WHICH PATIENTS COME TO THE VARIOUS CENTRES

Area of Residence	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital	Toowoomba Centre	Westbrook Training Centre
Brisbane—					
Central City	27	15	22	..	7
North Side, Inner Suburbs	74	43	28	..	5
North Side, Outer Suburbs	358	131	77	..	11
Western Suburbs	155	67	55	..	4
South Side, Inner Suburbs	43	26	8	..	6
South Side, Outer Suburbs	179	112	40	..	13
Bayside and Rural Suburbs	113	39	28	..	4
Outside City of Brisbane—					
Redcliffe and Pine Shire	57	11	10	..	4
South Queensland (North Coast Line, Brisbane Valley, &c.)	17	4	18	..	7
South Queensland (South Coast)	19	13	9	..	14
South Queensland (Western and South-western Lines)	36	11	46	..	4
Toowoomba and Adjacent Country Areas .. .. .	..	..	..	103	..
Central Queensland (Gladstone, Rockhampton, Mackay, Proserpine, and Adjacent Country Areas)	13	4	16	..	7
North Queensland	9	1	14	..	11
Other States	9	3	12	..	..
Address Not Known .. .. .	..	1	..	..	..
Totals	1,109	481	383	103	97

TABLE LXXXVIII

SHOWING SCHOOL ATTENDED, OR EMPLOYMENT FOLLOWED BY PATIENTS

School/Employment	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Too young for School or work	244	81	1	16	..
Kindergartens and Child Minding Centres	76	45	..	3	..
Primary Schools (State and Private)	640	266	114	50	4
Secondary Schools (State and Private)	97	26	96	15	5
Subnormal and Opportunity Schools	27	17	15	7	..
Special Schools (Blind, Oral Deaf, Spastic Centres, Multiple Handicapped Association Schools) .. .. .	..	..	2	1	..
Other Schools (Correspondence, Coaching Colleges, Business Colleges) .. .. .	..	2	1	1	..
Clerical and Commercial Employment	2	..	6	1	1
Tradesmen and Skilled Workers .. .. .	..	..	2	..	..
Semi-skilled and Unskilled Workers (Urban), (Labourers, process workers, apprentices, &c.)	7	2	63	4	20
Semi-skilled and Unskilled Workers (Rural), (Farm employees, stockmen, &c.) .. .. .	..	..	4	..	..
Miscellaneous Workers (Domestic duties, &c.)	1	2	11	1	..
Unemployed	3	5	68	4	65
School or Employment not known	12	35	..	..	2
Total	1,109	481	383	103	97

TABLE LXXXIX

SHOWING NUMBER OF EXAMINATIONS, INTERVIEWS, TREATMENTS, &C., BY THE VARIOUS PROFESSIONS

Centre	Psychiatrist	Psychologist	Social Worker	Speech Therapist	Occupational Therapist	Medical Consultant	Total
Mary Street Centre	7,018	4,316	1,190	2,840	..	683	16,047
Institute of Child Guidance	821	346	323	579	10	214	2,293
Wilson Youth Hospital Clinic	3,315	407	440	1	1,377	..	5,540
Toowoomba Clinic	811	..	..	..	..	..	811
Westbrook Training Centre	215	..	..	..	..	..	215
Totals	12,180	5,069	1,953	3,420	1,387	897	24,906

At the Child Guidance Clinic at the Children's Hospital, the Psychiatrists saw 236 new patients, and 1,378 returns from previous years. The Psychologists tested 86 patients.

TABLE XC

SHOWING AGES OF NEW PATIENTS ATTENDING THE VARIOUS CENTRES OF THE DIVISION

Age Group	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Up to 18 months	78	1	1	1	..
18 months and under 3 years	31	7	..	3	..
3 years to under 5 years	164	63	..	10	..
5 years to under 8 years	317	146	3	20	..
8 years to under 12 years	306	161	56	32	..
12 years to under 15 years	161	77	167	24	14
15 years to under 18 years	52	26	156	13	83
Total	1,109	481	383	103	97

TABLE XCI
(Part i)

SHOWING NUMBER OF E.E.G. INVESTIGATIONS DONE DURING THE YEAR

Total Number of E.E.G.'s ..	831
Welfare and Guidance Clinic, Mary Street (Selected Patients)	488 (58.7%) of the Total Number
Wilson Clinic Outpatients (Selected Patients)	37 (3.9%) of the Total Number
Wilson Youth Hospital (Selected Patients)	50 (6.2%) of the Total Number
Adult Psychiatric Clinic (Selected Patients)	41 (4.9%) of the Total Number
Children's Hospital Child Guidance (Selected Patients)	43 (4.2%) of the Total Number
Other Hospital Referrals ..	65 (7.9%) of the Total Number
Toowoomba Child Guidance (Selected Patients)	43 (5.3%) of the Total Number
Westbrook Training Centre for Boys (Selected Patients)	4 (0.4%) of the Total Number
Institute of Child Guidance (Selected Patients)	69 (8.5%) of the Total Number
Total	831 100%

TABLE XCI
(Part ii)

MARY STREET CLINIC			
Total	=	488	
Normal	=	291	= 59.6%
Abnormal	=	197	= 40.4%

WILSON OUTPATIENTS			
Total	=	37	
Normal	=	26	= 71%
Abnormal	=	11	= 29%

TABLE XCI
(Part iii)

CATEGORIES OF E.E.G. ABNORMALITIES

- Abnormalities have been divided into—
- (a) Active Epilepsy

(b) Epileptic Tendencies

(c) Focal Abnormalities
- (d) Excess slow activity

(e) Diffuse Abnormalities

(f) Brain-stem Abnormalities
- (g) Other non-specific abnormalities

SHOWING BRAIN ABNORMALITIES DETECTED BY E.E.G. INVESTIGATIONS

Clinic or Hospital	Active Epilepsy	Epileptic Tendencies	Focal Abnormalities	Excess Slow Activities	Diffuse Abnormalities	Brain-Stem Abnormalities	Non-specific Abnormalities
	No.	No.	No.	No.	No.	No.	No.
Welfare and Guidance Mary Street	18 (9.1%)	25 (12.7%)	25 (12.7%)	40 (20.3%)	14 (7.1%)	39 (19.8%)	36 (18.3%)
Wilson Youth Hospital Out-patients	Nil	2 (18.1%)	3 (27.2%)	2 (18.1%)	Nil	Nil	4 (36.3%)
Wilson Youth Hospital In-Patients	1 (5.3%)	3 (15.8%)	3 (15.8%)	1 (5.3%)	4 (21%)	2 (10.5%)	5 (26.3%)
Psychiatric Clinic	Nil	1 (5.5%)	2 (11.1%)	5 (27.7%)	4 (22.2%)	2 (11.1%)	4 (22.2%)
Children's Hospital O.P.D.	4 (21.1%)	1 (5.2%)	3 (15.8%)	4 (21.1%)	2 (10.5%)	Nil	5 (26.3%)
Westbrook Training Centre ..	Nil	Nil	Nil	1 (50%)	Nil	Nil	1 (50%)
Toowoomba Clinic	2 (12.5%)	3 (18.7%)	1 (6.2%)	1 (6.2%)	Nil	4 (25%)	5 (31.2%)
Institute of Child Guidance ..	2 (5.6%)	4 (11.1%)	7 (20%)	3 (8.4%)	2 (5.6%)	11 (31.4%)	6 (17.1%)
Other Hospital Referrals	7 (23.3%)	3 (10%)	8 (26.6%)	1 (3.3%)	2 (6.6%)	3 (10%)	4 (13.3%) Hypsarhythmia 2 (6.6%)

TABLE XCII
SHOWING SOURCES OF REFERRAL OF NEW PATIENTS

Sources	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital	Toowoomba Centre	Westbrook Training Centre
Parent or Guardian	321	174	20	50	..
Private Medical Practitioners	160	103	10	27	..
Public Hospitals	56	81	11	10	..
School Health Service	194	53	4	3	..
Maternal and Child Welfare Service	43	17	..	..	..
Other Health Department Agencies (Psychiatric Clinic, Social Work Division, &c.)	34	..	27	4	..
Commonwealth Government Departments (C.A.L., Vocational Guidance, &c.)	5	4	2	..	..
Children's Court Magistrate .. .. .	..	..	116	2	1
Department of Children's Services	141	4	160	2	96
Residential Institutions Caring for Children	49	1	15	3	..
Education Department	34	9	3	1	..
Non-State Education Agencies	23	26	..	1	..
Welfare Organisations Caring for Children	41	2	3	..	..
Other Agencies (Juvenile Aid Bureau, "Life Line", Marriage Guidance Council, &c.)	8	7	12	..	..
Total	1,109	481	383	103	97

TABLE XCIII
SHOWING REASONS FOR REFERRAL OF PATIENTS TO THE VARIOUS CENTRES

Reasons	Mary Street Clinic	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Aggressive Behaviour Against Persons (Assault, Cruelty, Attempted Homicide, &c.)	12	8	5	3	..
Aggressive Behaviour Against Property (Destruction, Vandalism, Fire-setting, &c.)	9	3	12	..	..
Antisocial Behaviour at Home or School (Unco-operative, deceitful, lying, disobedient, running away, &c.)	108	48	52	14	..
Stealing	39	7	146	14	..
Sexual Symptoms	18	3	35	3	..
School Problems (Lack of progress, not mixing or unpopular, resistance to study, school refusal, truancy)	199	93	12	22	..
Speech and Language Disorders	171	94	..	13	..
Psychosomatic and Sensory Disorders	66	33	1	5	..
Organic Brain Disorders and Mental Deficiency ..	46	17	1	3	..
Neurotic or Emotional Symptoms (Hyperactivity, tantrums, fears or phobias, jealousy, sibling rivalry, &c.)	123	45	6	22	..
For Psycho-diagnostic Testing, E.E.G., &c., only ..	28	12	3	1	..
For Psychiatric Assessment only (concerning education matters, employment, certification, discharge from institutions, &c.)	169	13	5	..	97
Mixed Symptoms	121	105	105	3	..
Total	1,109	481	383	103	97

TABLE XCIV
SHOWING DIAGNOSES OF CASES ATTENDING THE VARIOUS CENTRES

Diagnostic Categories	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
States of Diminished Consciousness	1	..	..	..	..
States of Clouded Consciousness .. ..	..	1	..	..	..
States of Intellectual Subnormality	189	100	119	42	21
Organic Brain Syndromes	35	44	7	4	..
Epileptic States	32	26	4	2	..
Disorders of Speech—					
Mutism and Deaf Mutism	4	4	..	..	..
Delayed onset,/retarded development of speech	133	109	2	14	1
Disorders of phonation and co-ordination of speech ..	75	30	2	3	..
Disorders of communication and comprehension of speech	37	47	..	4	..
Disorders of Calculation	1	2	..	..	..
Mixed Speech and Communication Disorders	11	21	..	..	..
Disorders due to Retarded or Arrested Development of the Brain	34	22	3	..	1
Disorders due to Degenerative or Heredito-Familial Diseases ..	2	..	..	1	..
Disorders due to Physical Agents—					
I Trauma	3	6	..	..	..
II Other than trauma (X-ray irradiation, Electric shock, Encephalopathy, &c.) .. ..	..	1	..	..	..
Disorders due to Chemical Agents (poisoning, anoxia, drugs, &c.)	8	9	..	..	..
Disorders due to Infective Agents (Meningitis, Encephalitis, &c.)	9	3	1	1	..
Disorders due to mixed Physical, Chemical, and Infective Agents	..	3	..	..	..
Disorders due to dietary deficiency, Thyroid disorders, Pituitary and other endocrine disorders	1	1	..	..	..
Disorders due to Haemoporetic Factors (Anaemia, RH Incompatibility, &c.)	1	6	..	..	..
Disorders due to Vascular Factors	1	..	..	..	..
Disorders due to Disturbance of Brain Physiology (Headaches, Migraine, &c.)	3	1	2	3	..
Disorders due to Isolation or Sensory Deprivation	16	22	1	..	..
Psychosomatic Disorders—					
Skin Reactions	5	2	..	..	..
Musculo-skeletal Reactions	2	4	1	..	..
Respiratory Reactions	13	8	2	..	..
Cardio-vascular Reactions	1	..	..	..	..
Haemic and Lymphatic Reactions	1	2	1	..	..
Gastro-intestinal Reactions	20	10	..	1	..
Genito-urinary Reactions	68	31	8	6	..
Endocrine Reactions	1	..	..	..	..
Nervous System Reactions	5	6	1	1	..
Psychogenic Reactions of Organs of Special Sense	2	..	..	..	..
Mixed Psychosomatic Reactions .. ..	..	1	..	..	..
Psychological Reactions to Physical Disorders—					
Reaction to Deformity (loss of limb, spasticity, &c.)	2	..	1	1	..
Reaction to Chronic Infectious Diseases (e.g., Rheumatic fever) .. ..	..	..	1	..	..
Reaction to Sensory Loss	1	1	..	..	..
Reaction to Endocrinopathies (e.g., obesity)	1	4	1	..	..
Reaction to Chronic Diseases (e.g., diabetes, coeliac disease)	7	2	1	..	..

TABLE XCIV—continued
SHOWING DIAGNOSES OF CASES ATTENDING THE VARIOUS CENTRES—continued

Diagnostic Categories	Mary Street Centre	Institute of Child Guidance	Wilson Youth Hospital Clinic	Toowoomba Clinic	Westbrook Training Centre
Transient Situational Behaviour Disorders—					
Gross Stress Reaction .. .. .	..	..	1	..	..
Adult Type Situational Reaction (e.g., showing anxiety) ..	4	9	1	..	..
Situational Adjustment Reaction of Infancy	3	7	..	..	..
Situational Emotional Reactions (e.g., temper tantrums, sibling rivalry, &c.)	115	80	15	12	..
Situational Neurotic Trait Reactions (e.g., tics, spasms, phobias, &c.)	25	8	1	..	..
Situational Habit Disorders (e.g., habitual manipulations, thumbsucking, nailbiting, &c.)	16	10	2	1	..
Mixed Situational Behaviour Disorders	10	8	4	..	..
Conduct Disorders—					
Aggression Against Persons	32	11	1	4	1
Aggression Against Property	2	3	9	..	2
Antisocial Behaviour (e.g., deceitfulness, lying, disobedience, &c.)	89	57	39	7	8
Stealing	31	15	120	8	68
Disorders Related to Sexual Behaviour	15	6	25	1	5
Disorders Related to School (e.g., general lack of progress, truancy, school refusal, &c.)	107	95	15	9	..
Mixed Conduct Disorders	46	32	77	21	13
Personality Disorders—					
Inadequate, Immature	79	84	25	13	11
Schizoid, Introverted	33	26	39	2	8
Cyclothymic	1	..	..	..	..
Paranoid	3	3	4	..	..
Emotionally Unstable, Hysterical	29	26	9	..	2
Passive-Aggressive (including aggressive and dependent types)	51	45	14	4	3
Compulsive, Obsessional	5	5	2	..	..
Antisocial Sociopath, i.e., “Psychopath”	1	..	2	1	7
Dyssocial Personality	1	..	12	..	11
Sociopath With Sex Disorder	2	..	17	..	..
Mixed and Other Personality Disorders	3	2	2	1	..
Psychoneuroses—					
Anxiety State	61	18	5	1	1
Dissociative Reaction .. .. .	..	..	2	..	..
Conversion Reaction	1	3	..	..	..
Phobic Reaction (including School Phobia)	10	26	4	1	..
Obsessive-Compulsive Reaction	7	..	..	2	..
Neurotic Depressive Reaction	11	..	3	1	1
Undifferentiated and Mixed Psychoneurotic Reactions	3	..	1	..	..
Psychoses—					
Affective Psychotic Disorders .. .. .	..	1	1	..	..
Schizophrenic Disorders (Adult and Adolescent)	1	1	2	..	..
Schizophrenic Disorders (Childhood Type) .. .. .	..	1	..	..	..
Early Infantile Autism	1	2	..	..	..
Diagnosed as “Normal”	126	12	1	*	*

* Number not known

ALCOHOLISM CLINIC

Medical Officer: R. B. MILTON, M.B., B.S. (Q'ld.)

The value of the initial decision to set up this Clinic within a large general hospital has continued to be shown. Alcoholism is coming to be regarded more as an illness to be treated in the same setting as other illnesses, and the integration of the Clinic as part of the hospital encourages this view. A ready source of referral is provided by the hospital, and all specialist services are readily available. Table XCV shows the referral sources for patients and it will be seen that of 450 new patients presenting for treatment, 136 were referred by doctors within the hospital itself. A further point indicating the increased acceptance by the medical profession of alcoholism as an illness was that 211, i.e. almost half, of all referrals to the clinic were made by doctors.

Treatment of alcoholism within the hospital often begins outside the alcoholism clinic itself. For example, two group meetings of alcoholic patients referred for consultation after "drying out" are held each week in Lawson House. These meetings serve the basic purpose of evaluation of patients, and also allow patients to experience group methods from the outset of treatment. There was a total of 328 attendances (280 males, 48 females) at these meetings.

Pavilion 4, the building housing the alcoholism clinic, the nursing staff, and liaison officer, are supplied by the hospital. Other staff members, building alterations and special equipment are provided through the hospital from the Liquor Acts Trust Fund. Building alterations are at present nearing completion, and will provide additional space for group therapy rooms, offices, and for storage of records and literature.

Mrs. J. Hay was appointed as clinical psychologist during the year. She had had previous experience of working with alcoholics through visits to the Marburg Inebriates' Institution. Approval has also been granted for positions of social worker and secretary: however these positions are unfilled at present. The appointment of a secretary should be possible shortly with the completion of building alterations.

Mr. W. Lovejoy, clinical psychologist at Lawson House conducts one group therapy meeting at the Clinic each week, and other sessions are provided on a voluntary basis by Dr. R. Lee, a Minister of religion with training in pastoral counselling.

Treatment methods at the alcoholism clinic are based on community therapy principles, i.e. all influences within the treatment unit are felt to be important, and efforts are made to see that as many aspects of patients' activity as possible are of therapeutic value.

The most important single influence in treatment of this nature is the effect that patients have on one another. It is the duty of staff members to influence patients so that their contacts with one another are constructive: For example, patients are encouraged to assist other patients in discussing their problems and in finding new ways of viewing them. In this way patients come to feel that they are able to help others at the Clinic as well as be helped themselves.

In addition patients are expected to play their part in the everyday running of the Clinic, and are sometimes able to offer suggestions for improvement. The basis for the necessary communication involved in these processes is provided through group meetings. There are at least three group meetings held each day. Usually these consist of a film on alcoholism or on important problems of living, followed by a discussion, then a group therapy meeting, dealing specifically with patients', or relatives' problems, and later a meeting to discuss the affairs of the Clinic, e.g. allocation of duties, rules, &c. Patients attend Lawson House occupational therapy section each afternoon.

This programme of group therapy is held each week-day morning, but it has been possible to provide a session of therapy on Thursday evenings as well. This session lasts from 6 p.m. to 9 p.m. and consists of meetings similar to those held each morning. It is a very important session, for it allows patients working during the day to continue their treatment.

A treatment programme of this nature develops slowly, and progress so far has been made possible by the willingness of staff to accept and implement new treatment methods. The results of these methods in terms of acceptance by patients have been encouraging.

Table XCVI shows the numbers of patients who presented for treatment during the year ending 30th June, 1966. It will be seen that 558 patients and 391 relatives of patients presented for treatment at the Clinic.

Current opinion indicates that the involvement of a patient's relatives in the process of treatment is as important as the treatment of the patient. The figures above indicate that relatives as well as patients are becoming involved in treatment at the alcoholism clinic.

Of the 558 patients presenting for treatment, 177 required admission to the Clinic. The remainder attended as day-patients. The average length of stay of the resident patients was 16.9 days and the daily average of patients resident in the Clinic was 8.2. Patients often do not wish to be admitted and in many cases it is preferable that they continue to work while still receiving treatment.

Patients are encouraged to attend the Clinic whenever possible. Frequent contact with staff members and other patients allows the patient and his relatives to identify themselves with the Clinic and in fact to become a part of its work. In this way they can come to look upon the Clinic as a place for learning how to handle problems, and regular attendance allows them to deal with stressful situations before these may result in an episode of drinking. The smallness of the present staff has prevented full implementation of these principles as to do so would necessitate having further group therapy sessions outside working hours. In spite of this a very encouraging attendance rate has been noted. Table XCVII sets out the numbers of patients and relatives who were receiving treatment at the Clinic each month and the number of visits made each month. It will be seen that most progress has been made with attendances of relatives. For example in July 1965 thirteen relatives attended the Clinic for a total of 49 visits; while in June 1966 61 relatives attended the Clinic for a total of 101 visits. Since the number of patients attending the Clinic has not increased at the same rate, the inference is that for each patient attending the Clinic, more of his relatives are becoming interested and involved in his treatment.

A further point of interest to be drawn from Tables XCVI and XCVII relates to the relative numbers of male and female patients attending the Clinic. The usually accepted rate of alcoholism in the general population is approximately one female for every four males. Of a total of 558 patients presenting for treatment, 77 were females and 481 were males, i.e. a ratio of 1 to 6.2. Thus alcoholism in females does not result in their being referred for treatment at a rate consistent with the over-all incidence of alcoholism in the community. This may be related to the fact that there are more social pressures requiring male than female alcoholics to seek treatment. Education programmes therefore need to emphasize the need for female alcoholics to receive treatment.

Group methods provide the basis of treatment at the alcoholism clinic. These are used because they are more effective in the treatment of this illness than are methods based solely on the individual approach. Apart from this, however, group methods are able to provide much more treatment for patients by reason of economics of staff.

Table XCVIII sets out the number of attendances by patients and relatives at various therapy sessions. A total of 14,180 attendances at meetings was recorded. This quite considerable number has been possible with only a limited number of staff. The smallness of the staff is accentuated by the fact that both medical officer and psychologist spend four half-days each week working at the Wacol Rehabilitation Clinic. The use of group methods does not, of course exclude individual contact of patients and staff, and all patients and relatives presenting for treatment are interviewed by the medical officer. All patients admitted to the Clinic are interviewed and assessed by the psychologist. There are frequent individual contacts as well between nursing staff and liaison officer and patients. The number of these interviews has not been recorded.

A further encouraging development has been the formation by the patients and relatives of their own association. This meets each week and performs a number of useful functions

including the organisation of social activities and of visits by groups of patients to other patients or relatives in need of assistance.

One of the functions of a Clinic of this type is to provide facilities for training and orientation of workers in other fields in approaches to alcoholism. This has been possible so far on a limited scale. Contact has been made with probation officers, Prisoner's Aid Society and members of the St. Vincent de Paul Society. Discussions have been held with these groups on the best approaches to handling alcoholics and on methods of referral. A good working relationship has been set up with these groups. In addition, patients attending the Clinic are encouraged to attend Alcoholics Anonymous meetings, and a number of referrals to the Clinic have been made by Alcoholics Anonymous members. Medical, Theology and Social Studies students have participated in discussion groups at the Clinic.

Although the Clinic is completely voluntary, it has been possible for probation officers to refer patients to the Clinic for treatment as part of their probation. The attendance of these patients is thus not entirely voluntary, but the forces directing them to the Clinic are not in the hands of the Clinic staff. This system has worked fairly well in the few instances where it has been tried and is in keeping with currently accepted methods overseas for treatment of alcoholics who would otherwise refuse treatment.

A further aspect of the Clinic's work relates to aid given to patients and relatives of patients over the telephone. A few minutes' discussion with support of a patient in a telephone conversation in a moment of crisis can often be of great value. A total of 770 such contacts were recorded since October 1965.

Two final aspects of the work at the Clinic deserve mention. The first relates to the use of special films in the treatment of alcoholism. One such film is shown each day and is followed by a discussion. The response of patients to these films is favourable. This technique has evolved interest in workers in alcoholism clinics in other States, and one other State is now using films in this way. The other aspect deals with the use of other educational materials in treatment. Outstanding articles on alcoholism from books or magazines are selected by the Clinic Staff and are reprinted by the office of the Co-ordinating Committee on Alcoholism. Patients and relatives find this material of particular interest, especially in the early stages of treatment.

TABLE XCV	
Showing referral sources of new patients	
Source	Number of patients referred
Medical—	
(a) Doctors within Royal Brisbane Hospital ..	136
(b) Other doctors ..	75
Self referred ..	69
Spouse, Relative or friend ..	57
Alcoholics Anonymous ..	27
Social Work Agency ..	20
Wacol Rehabilitation Clinic	16
Court, police, probation officers	15
Employers	10
Life Line	10
Clergy	9
Co-ordinating Committee on Alcoholism	4
Other Sources	2
Total	450

TABLE XCVI						
SHOWING PATIENTS AND RELATIVES PRESENTING FOR TREATMENT						
—	Patients			Relatives		
	M	F	Totals	M	F	Totals
New	392	58	450	101	236	337
Seen Previously	89	19	108	17	37	54
	Total ..		558	Total ..		391
Combined Total 949						

TABLE XCVII								
SHOWING PATIENTS AND RELATIVES RECEIVING TREATMENT								
—	Patients				Relatives			
	Patients treated		Number of Visits		Relatives treated		Number of Visits	
	Males	Females	Males	Females	Males	Females	Males	Females
July	78	12	145	53	3	10	13	36
August	58	16	120	30	4	18	6	28
September	72	16	215	56	6	18	10	41
October	78	17	206	50	7	24	32	80
November	75	14	221	57	9	27	10	77
December	59	15	202	38	14	37	20	64
January	76	13	194	25	16	43	21	96
February	86	15	206	36	19	50	25	122
March	85	11	205	35	9	51	14	127
April	84	12	250	21	21	45	31	120
May	87	15	246	40	25	44	52	90
June	92	12	232	35	22	39	30	71
Monthly Averages ..	77.5	14.0	203.3	39.8	12.9	33.4	22.0	79.3

TABLE XCVIII		
SHOWING ATTENDANCES AT TREATMENT SESSIONS		
—	Patients	Relatives
Film discussion groups	5,023	973
Group therapy	5,495	1,205
Patient government meetings (from January to June) ..	1,484	..
Totals	12,002	2,178
Combined Total 14,180		

DIVISION OF LABORATORY SERVICES

LABORATORY OF MICROBIOLOGY AND PATHOLOGY

Director: J. I. TONGE, M.B., B.S. (Syd.), D.C.P. (Syd.), M.C.P.A.

Deputy Director: M. J. J. O'REILLY, M.B., B.S. (Syd.), M.C.P.A.

Pathologists: A. DAVISON, M.B., B.S. (Qld.), M.C.P.A.

N. G. JOHNSTON, M.B., B.S. (Qld.), M.C.P.A.

Medical Virologist: B. C. ALLAN, M.B., B.S. (Qld.), M.R.C.P.

Laboratory Supervisor: D. J. W. SMITH, M.Sc. (Melb.).

GENERAL

The staff of the Laboratory and the Institute of Forensic Pathology consist of 5 medical officers, 1 graduate laboratory supervisor, 3 senior bacteriologists, 11 science graduates, 2 laboratory technicians division II, 11 technical assistants, 10 cadets, 11 attendants, a clerical staff of 7 and 4 cleaners.

Dr. B. C. Allan commenced duty as Medical Virologist, and Dr. N. G. Johnston as Pathologist in July 1965. Mr. I. Cook, M.Sc., was appointed Senior Bacteriologist in September 1965. Dr. Allan visited virology laboratories in Melbourne and Sydney in August 1965.

Dr. D. J. Brand, a Research Fellow supported by a grant from the National Heart Foundation, has been working at the Institute of Forensic Pathology.

Miss C. Byrne resigned from the clerical staff of the Laboratory after 21 years. Her loyal and efficient service during this period has been greatly appreciated.

The Laboratory was transferred from William Street to the new Health and Welfare building in George Street on 26th November, 1965, the day after the official opening. Thanks to the excellent co-operation of the Works Department the move ran smoothly and work commenced in the new premises on 29th November. The Laboratory occupies 3 floors of the new building and in addition the entire eighth floor is used for an air-conditioned animal house. Storage space, adequate for present needs, is provided in the basement. The new virology laboratory is situated on the second floor.

The additional laboratory space, the improved facilities for clerical work and maintenance of records are much appreciated. Satisfactory conditions now are available for the reception and examination of patients. The conference room and library adjacent to the laboratory are valuable assets and the air-conditioning of the building has proved most valuable.

The new Animal Breeding Station at the Normanby was completed during the year and was occupied on 1st November, 1965. This building is air-conditioned and functional in design, providing excellent facilities for the breeding of rabbits, mice and guinea pigs. In addition sheep pens and runs are available beneath the building. Two rooms with special filtered air are set aside for the breeding of a "germ free" mouse colony for use in the virology department. Two full-time attendants are required to maintain the building and to care for the animals. The building is flexible in design and should be able to be adapted to varying future needs. The old animal house buildings have been demolished.

Every effort is made to have regular quality controls in the laboratory work. The staff participated in biochemistry and haematology evaluation trials conducted by the College of Pathologists of Australia with very satisfactory results. Unrestricted approval has been granted to the Laboratory by the Laboratory Approval Committee of the College of Pathologists.

The Director is the Queensland representative of the Traffic Injury Sub-Committee of the National Health and Medical Research Council and attended two meetings during the year. The Director represents the Department of Health on the Council of the Queensland Institute of Medical Research. He also is a member of the Examination Council of the Australian Institute of Medical Laboratory Technology. The Deputy Director is a member of the Red Cross Blood Transfusion Committee.

The medical staff give a series of lectures on Forensic Medicine in the University of Queensland and conduct regular post-mortem demonstrations for medical and dental students and also for police recruits. Close liaison is maintained with the University Departments of Pathology and Microbiology and the staff provide them with cultures and specimens of interest. A wide variety of photomicrographs is being collected for teaching purposes.

A country tour was made by the Director for the Post-graduate Medical Education Committee of the University of Queensland during which two papers were read in Rockhampton and one in Gladstone. The Director presented a paper as part of a symposium on Traffic Accidents to the Royal Society and the Deputy Director participated in the Nisbet Symposium on Head Injuries for the College of Radiologists of Australasia. He also took part in a symposium on Alcohol in Traffic Accidents for the Australian National Committee for the Prevention of Alcoholism. Mr. Smith read a paper entitled "The Organisation of a Diagnostic Laboratory" to the Australian Society of Microbiology in March 1966.

The Director and Dr. Davison have been appointed to a subcommittee of the Australian Medical Association to investigate facilities for and problems associated with Forensic Pathology in Queensland.

The staff has collaborated actively with the Queensland Institute of Medical Research, the University of Queensland and other institutions in a number of research projects many of which are at present in progress. These include, incidence of Myocarditis in normal hearts, Staphylococcal phage types in hospital infections, a survey of Staphylococcal phage types in New Guinea natives, and the cultural and serological investigation of Leptospirae from Queensland and overseas sources. In the Tuberculosis Section studies continue of the Atypical Mycobacteria and the primary resistance of *M. tuberculosis*. In the Virology Section, in addition to routine diagnostic work, an epidemiological survey of enterovirus and respiratory virus infections in Brisbane and a study of neutralising antibodies in Rubella are in progress. The pathology of traffic accident fatalities, cot deaths and sudden deaths in Asthmatics is receiving special attention at the Institute of Forensic Pathology. Parasitological surveys are in progress on patients from the Brisbane Special Hospital at Goodna and on the aboriginal population at Palm Island. Serological surveys have been carried out on Australian aboriginals and in various parts of Papua and New Guinea for Q fever, leptospiral antibodies and syphilis serology.

The Laboratory is the World Health Organization Leptospirosis Reference Centre for Australasia and the Tuberculosis Reference Laboratory for Queensland.

During the year excellent co-operation has been received from the Royal Brisbane Hospital, the Princess Alexandra Hospital, the Queensland Institute of Medical Research, the Animal Research Institute at Yeerongpilly, the Institute of Medical and Veterinary Science, Adelaide, and the Institute of Clinical Pathology at Lidcombe.

Q FEVER

During the year, 1st July, 1965 to 30th June, 1966, 365 recent infections with Q fever were diagnosed in the laboratory. Of these 330 were from Queensland, 34 from New South Wales and one from Victoria. Diagnostic criteria used are: a complement fixation titre for *Coxiella burnetii* of 1:64 or greater in a single specimen or a fourfold rise in titre in paired sera. The geographical distribution of the cases is set out in Table XCIX.

The cases occurred predominantly in persons associated with the meat industry and the occupational distribution is essentially the same as that in previous years.

Sera from 1,007 natives of the Fore and neighbouring tribes in the highlands of New Guinea were tested for antibodies to *C. burnetii* but all were negative.

A report has been completed on the serological and epidemiological investigation of the outbreak of Q fever which occurred in an abattoir at Maryborough between September and November 1964, involving 53 of a staff of 162 employees.

TABLE XCIX
GEOGRAPHICAL DISTRIBUTION OF Q FEVER CASES DIAGNOSED
IN THE LABORATORY
(1st July, 1965 to 30th June, 1966)

QUEENSLAND						Number
District						
Metropolitan	..	..	..	..	..	98
Moreton	..	..	..	..	..	44
Maryborough	..	..	..	..	..	29
Downs	..	..	..	..	..	42
Cairns	..	..	..	..	..	19
Townsville	..	..	..	..	..	9
Mackay	..	..	..	..	..	20
Rockhampton	..	..	..	..	..	31
Roma	..	..	..	..	..	25
Central West	..	..	..	..	..	10
South-West	..	..	..	..	..	3
Total	..	..	..	..	..	330
NEW SOUTH WALES						
Northern Rivers	..	..	..	..	..	7
Tenterfield	..	..	..	..	..	12
Tamworth	..	..	..	..	..	8
Broken Hill	..	..	..	..	..	6
Goulburn	..	..	..	..	..	1
Total	..	..	..	..	..	34
VICTORIA						
Ballarat	..	..	..	..	..	1

SCRUB TYPHUS

Five cases of Scrub Typhus were diagnosed serologically during the year, 3 from Cairns, one from Townsville and one from Ingham. In each the clinical history was typical. The serological diagnostic criteria was a titre of 1:128 or greater in a single serum specimen or a fourfold rise in titre in paired sera.

At the request of the Australian Baptist Missionary Society 70 sera from natives in the Baiyer River in New Guinea were examined for serological evidence of typhus with negative results.

LEPTOSPIROSIS

(a) Incidence: geographic and occupational

During the year, 1st July, 1965 to 30th June, 1966, 115 patients showed serological evidence probably indicative of recent leptospirosis. Of these 108 were from Queensland and 7 from New South Wales. This is a marked reduction compared with the preceding year. The geographical distribution of cases and the probable causative serotypes are set out in Table C. The occupational distribution of cases is summarised in Table CI.

(b) The WHO/FAO Leptospirosis Reference Laboratory

Increased accommodation in the new laboratory has permitted enlargement of the type culture collection. Type strains of 84 serotypes of leptospires are now held. In addition the laboratory maintains a collection of several hundred Australian strains, the serological typing of which is proceeding. Strains of the *hyos* group are currently being investigated. The subserotype *hyos bakeri* has been recorded from the rodents *Hydromys chrysogaster* and *Uromys caudimaculatus* in North Queensland.

A study of the Japanese strain Ictero I was made during the year as part of a collaborative study for the selection of a neotype strain of *L. icterohaemorrhagiae*.

Culturing of blood from patients in southern Queensland and northern New South Wales was maintained during the year but no isolates new to this area were obtained.

Through the co-operation of officers of the Forestry Department a number of native rats *R. assinilis* and *R. culmorum* from the Gallangowan district in southern Queensland were examined for leptospires. No isolates were obtained. However, it is hoped that more material from this and other areas may be made available in the future.

At the request of officers of the Department of Agriculture, Stock and Fisheries of the Territory of Papua and New Guinea, sera from dogs and cats attending the Veterinary Clinic at Konedobu are being screened for leptospiral antibodies. Twenty-four dog and sixteen cat sera examined to date have given negative findings.

During the year 1,007 sera from natives of the Fore and neighbouring tribes in the highlands of New Guinea were screened for leptospiral antibodies with a representative group of antigens. Antibody titres of 100 or more against *hyos* were found in 87 sera. Titres of the same order with other serotypes were *celledoni* (15), *javanica* (10), *zanoni* (3), *ballum* (1) and *icterohaemorrhagiae* (1).

Another seventy sera from Aranda and Elyand in the Mt. Hagen area reacted similarly with *hyos* (7), *australis* (1) and *javanica* (1).

TABLE C
GEOGRAPHICAL DISTRIBUTION AND CAUSATIVE SEROTYPES IN
115 LEPTOSPIRAL INFECTIONS.
(1st July 1965 to 30th June 1966).

Serotype						Number
Coastal area of Queensland, North of Rockhampton—						
<i>icterohaemorrhagiae</i> group	..	..	..	..	..	1
<i>canicola</i> group	..	..	..	..	..	4
<i>pyrogenes</i> group	..	..	..	..	..	6
<i>australis</i> group	..	..	..	..	..	6
<i>pomona</i>	..	..	..	..	..	10
<i>hebdomadis</i> group	..	..	..	..	..	9
<i>hyos</i>	..	..	..	..	..	2
Indeterminate (? mixed infection)	..	..	..	..	..	4
Total	..	..	..	..	..	42
Coastal area of Queensland, Rockhampton to New South Wales border—						
<i>icterohaemorrhagiae</i> group	..	..	..	..	..	2
<i>australis</i> group	..	..	..	..	..	4
<i>pomona</i>	..	..	..	..	..	41
<i>grippotyphosa</i>	..	..	..	..	..	1
<i>hebdomadis</i> group	..	..	..	..	..	1
<i>hyos</i>	..	..	..	..	..	5
Total	..	..	..	..	..	54
Darling Downs and Western Queensland—						
<i>australis</i> group	..	..	..	..	..	1
<i>pomona</i>	..	..	..	..	..	6
<i>hebdomadis</i> group	..	..	..	..	..	1
<i>hyos</i>	..	..	..	..	..	2
Indeterminate (? mixed infection)	..	..	..	..	..	2
Total	..	..	..	..	..	12
New South Wales—						
<i>pomona</i>	..	..	..	..	..	6
<i>hyos</i>	..	..	..	..	..	1
Total	..	..	..	..	..	7

TABLE CI
OCCUPATIONAL DISTRIBUTION OF LEPTOSIPROSIS INFECTIONS
(1st July, 1965 to 30th June, 1966)

						Number
Meat Industry	..	..	..	..	..	52
Dairying Industry	..	..	..	..	..	19
Sugar Industry	..	..	..	..	..	7
Other Occupations	..	..	..	..	..	10
Unspecified	..	..	..	..	..	27
Total	..	..	..	..	..	115

Assistance was given to officers of the Faculty of Veterinary Science, University of Sydney in the interpretation of results of a survey of New South Wales horses for leptospiral agglutinins, carried out with commercially prepared antigens. Check tests with commercial antigen were performed in this laboratory and 100 sera were retested with a representative group of live culture antigens.

The laboratory continues to provide cultures and anti-sera on request to various institutions and is also currently engaged in collecting material for immunoglobulin studies at the School of Public Health U.C.L.A. The routine diagnostic service provided for medical and veterinary practitioners is used extensively.

BRUCELLOSIS

Twenty-three cases of brucellosis were diagnosed serologically during the year, 18 in Queensland and 5 in New South Wales. A fourfold increase in titre in paired sera or a titre of 1:128 or greater in a single specimen was regarded as diagnostic.

The geographic and occupational distribution of these cases is set out in Tables CII and CIII.

STAPHYLOCOCCI

The survey of *Staphylococcus aureus* in New Guinea natives in the Gazelle Peninsula, conducted in association with Dr. J. Kariks at the Nonga Base Hospital at Rabaul has been completed. It was found that the nasal carrier rate of *Staph. aureus* amongst healthy coastal natives living in the Rabaul area was 13 per cent. Almost all of these strains were resistant to penicillin in vitro. Of the cultures from clinical lesions 42 per cent. were typed by Group II phages. A report of this investigation has been submitted for publication.

Most of the cultures referred for phage typing came from Princess Alexandra Hospital where a systematic survey of hospital infections continues. The distribution of phage types in this series is essentially the same as that found last year.

ENTERIC BACTERIOLOGY

Pathogenic coliforms were the most frequently isolated organisms from patients with gastrointestinal symptoms. Strains were cultured from 25 infants in the Metropolitan area and 4 infants from country centres.

Shigella species were isolated from 14 patients, 10 from the Brisbane Special Hospital, Goodna; (*Sh. dysenteriae* type II from 6 and *Sh. sonnei* from 4), and *Sh. sonnei* from 4 other patients in the Metropolitan area. Three strains of Salmonella were cultured during the year, *S. anatum*, *S. typhimurium* and *S. adelaide*. The latter was cultured in seven successive weeks from one patient.

TABLE CII
BRUCELLOSIS INFECTIONS ON SEROLOGICAL EVIDENCE
(1st July, 1964 to 30th June, 1966).

Locality	Number	
	1964-65	1965-66
<i>Queensland—</i>		
Brisbane	8	5
Ipswich	1	2
Monto	1	..
Clermont	1	..
Cairns	3	2
Toowoomba	3	1
Laidley	1	..
Beaudesert .. ..	..	1
Roma .. ..	..	1
Maryborough .. ..	..	2
Rockhampton .. ..	..	3
Townsville .. ..	..	1
Totals	18	18
<i>New South Wales—</i>		
Murwillumbah	1	..
Coffs Harbour	1	..
Taree	1	1
Sydney	1	..
Woodenbong .. ..	..	1
Tamworth .. ..	..	1
Lismore .. ..	..	1
Kurri .. ..	..	1
Totals	4	5

TABLE CIII
OCCUPATIONAL DISTRIBUTION OF BRUCELLOSIS CASES
(1st July, 1965 to 30th June, 1966)

						Number
<i>Queensland—</i>						
Meat Industry .. ..	..	..	..	..	..	7
Farmers .. ..	..	..	..	..	..	2
Railway workers .. ..	..	..	..	..	..	1
Transport Company Manager .. ..	..	..	..	..	..	1
Schoolboy .. ..	..	..	..	..	..	1
Unknown .. ..	..	..	..	..	..	6
Total .. ..	..	..	..	..	..	18
<i>New South Wales—</i>						
Meat Industry .. ..	..	..	..	..	..	2
Farmer .. ..	..	..	..	..	..	1
Tick Inspector .. ..	..	..	..	..	..	1
Unknown .. ..	..	..	..	..	..	1
Total .. ..	..	..	..	..	..	5

MYCOPLASMA PNEUMONIAE

Complement fixation tests with commercially prepared antigens, using a microtechnique, are being made on selected sera. Two available antigens are being compared for sensitivity.

MELIOIDOSIS

In February 1966, pus collected at necropsy from a male aged 50 years on Thursday Island was submitted for culture. From this, *Leofflerella pseudomallei* (syn. *Pseudomonas pseudomallei*) was grown in pure culture. The identity of the organism was confirmed biochemically and guinea pigs inoculated with a young culture showed the typical Strauss reaction. Sections from lung, liver and spleen of this patient showed abscesses with both intracellular and extracellular bacilli. The histological findings were entirely consistent with melioidosis. This is the first confirmed case of melioidosis recorded from Thursday Island.

A male aged 44 years died at Thursday Island in March 1966 and the histopathology of the lung and spleen were in keeping with melioidosis. Regrettably the diagnosis could not be confirmed as the cultures were found to be contaminated on arrival.

Another male patient aged 40 years died in April 1966 on Thursday Island, with a clinical disease suggestive of melioidosis but no definite diagnosis was possible owing to post-mortem autolysis of the tissue and contamination of the cultures.

By courtesy of the Animal Research Institute complement fixation tests for melioidosis were done on 65 human and 20 animal sera (6 rats and 14 domestic animals) from Thursday Island. One human serum gave a titre of 1:40, all the other sera were negative.

SYPHILIS SEROLOGY

Routine serological tests for syphilis were carried out on 13,519 sera during the year. A survey was made of sera from aboriginals at the Aurukun and Weipa missions using the V.D.R.L., 1/5 Kolmer Wassermann and Reiter C.F. tests. Of the 61 sera from Aurukun 22 reacted with one or more of the three tests and of 29 sera from Weipa 2 reacted similarly. These 24 reactive sera were subsequently sent to Dr. Garner at the Institute of Clinical Pathology, Lidcombe, for treponema immobilisation tests and 18 from Aurukun were positive. The significance of these results is doubtful and is probably not entirely due to syphilis. The age distribution at Aurukun fits suggestively with what is known of yaws in the area with low incidence of reactors in those born after penicillin was introduced into the area.

A similar survey was made of 1,007 sera from natives of the Fore and neighbouring tribes in the Okapa district in the highlands of New Guinea, collected by Dr. Hornabrook. Of these 1,007 sera, 303 reacted in one or more of the V.D.R.L., Kolmer or Reiter C.F. tests. Of these 303 reactive sera 219 were suitable for the treponema immobilisation test and 164 were positive.

The serological findings indicated that the natives in this latter survey have or have had a treponemal disease, which from information supplied by Dr. Hornabrook and Dr. Garner, is most probably yaws. Evidence for this is: (1) Yaws is a disease of tropical countries whereas endemic syphilis tends to occur in arid regions. (2) There was no evidence of neurosyphilis in the area. (3) Clinically no congenital syphilitic children were seen and (4) a few cases of clinical yaws were seen in the Auyana in 1958-60. (5) It is unlikely that two separate treponemal diseases would exist to any extent in the peoples involved.

THE TUBERCULOSIS LABORATORY

The laboratory is recognised as the reference centre for Tuberculosis in Queensland. Cultures for sensitivity tests have been submitted from a number of other laboratories and 28 cultures, 17 from New Guinea, for identification. A collection of type cultures was forwarded at the request of the University of Indonesia at Djakarta.

During the year *Mycobacterium tuberculosis* was isolated from 192 patients, two being bovine strains. Chromogenic Anonymous mycobacteria were isolated from 108 and non-chromogenic Anonymous mycobacteria from 123 patients.

Only when Anonymous mycobacteria were cultured on two or more of the four tubes routinely inoculated from each specimen, were the strains investigated further. This involved specimens from 198 patients and the classification of these strains is set out hereunder, using Runyon's nomenclature.

Classification	Number of Patients
Group I	3
Group II	25
Group III	108
Group IV	7
Chromogenic Group IV	9
Group IV <i>M. fortuitum</i>	21
Group II and Group III	3
Group II and Group IV (<i>M. fortuitum</i>)	2
Group III and Group IV (<i>M. fortuitum</i>)	9
Group III and <i>Nocardia asteroides</i>	1
Group III and Group IV	10
Total	198

All the cultures of *M. fortuitum* were recovered from sputum except one which was isolated from a skin lesion on the leg of a female aged 64 in Brisbane.

Routine sensitivity tests are made on all newly isolated culture of *M. tuberculosis* and on all Anonymous mycobacteria which grow on two or more tubes. The Resistance Ratio technique is employed and each culture is tested with Streptomycin, para-aminosalicylic acid, isoniazid, viomycin, cycloserine and ethionamide. Sensitivity tests with Capreomycin are made on request.

Erythromycin—Sensitivity of Acid-fast bacilli

Preliminary tests have been made to determine the sensitivity of acid-fast bacteria to Erythromycin. This investigation was stimulated by the observation of Organick et al (1960) who found that Erythromycin, given for an intercurrent pneumococcal pneumonia in a patient with diffuse infection due to a photochromogenic mycobacterium, produced a striking improvement in the primary disease.

The drug was incorporated into Lowenstein-Jensen medium in concentrations of 15, 10, 5, 2.5, 1.25 and 0.6 micrograms per millilitre. Inoculum size for each tube was approximately 10^{-2} mcg. of bacilli, wet weight which represents 10^4 to 10^5 viable units. Duplicate tests were made using Lowenstein-Jensen plates on which discs containing the drug were placed after inoculation.

To date 27 strains have been investigated including *M. tuberculosis* (4 human and 2 bovine strains), *M. ulcerans*, *Nocardia asteroides* and Anonymous mycobacteria of all four Runyon groups.

Inhibition of growth was noted with *M. kansasii*, a Group II scotochromogen, *M. phlei* and two strains of *Nocardia asertoides* concentrations of erythromycin between 5 and 2.5 mcg. incorporated in the medium under the conditions of the experiment. *M. tuberculosis*, *M. ulcerans*, *M. balnei*, Group III and Group IV strains showed no inhibition of growth in the highest concentrations used.

HAEMOGLOBIN AND SERUM PROTEIN SURVEY AT TWO ABORIGINAL MISSIONS

In October 1965 Dr. Doherty of the Queensland Institute of Medical Research, visited the Aurukun and Weipa Missions and collected blood from children with clinical signs or a history possibly indicative of heart disease, together with controls matched for age and sex. Blood was also taken from children and adults not included in these two groups. Erythrocyte sedimentation rates were determined at the missions and the remainder of each sample was forwarded to Brisbane. Antistreptolysin O titres were determined at the Princess Alexandra Hospital and haemoglobin and serum protein estimations were carried out in this laboratory.

Most specimens from both missions had haemoglobin concentrations within normal limits. From Aurukun 73 were tested with a range of 6.8 to 18.5 grams per 100 ml., only three being below 12 grams per 100 ml. From Weipa 39 were tested with a range of 9.0 to 16.0, only three being below 12 grams per 100 mls. The patients and control groups each had comparable levels.

Serum protein levels were high (mean 7.7 grams per 100 ml. with a range of 6.5 to 9.0). Moderately or markedly elevated gamma-globulin levels were found in 36 of the 69 sera tested. Dr. Doherty found the erythrocyte sedimentation rates to be high in many of the children, but with no difference between those under investigation for heart disease and the controls. There is a suggestive association between elevated serum protein and high sedimentation rates. This association has previously been noted in Australian aboriginals (Horsfall 1957).

VIROLOGY

The Clinical Virology Laboratory opened on 28th November, 1965. Diagnostic virology laboratories usually provide two types of service, one being the diagnosis of individual cases, the other the provision of epidemiological information. The time taken in diagnosing a virus infection may be several weeks and as a result the findings may not be of practical value to the clinician. However, if he is told of the prevailing infections the clinician is helped to make a well based clinical diagnosis in many cases.

The first cases were referred on 13th December, 1965. From then till mid-March the laboratory concentrated on the first type of service, diagnosing single cases. This work has continued, but in addition weekly faecal collections have been made from infants at the Clayfield Maternal and Child Welfare Home and from toddlers at the Sandgate Maternal and Child Welfare Home. In an effort to find which enteroviruses and adenoviruses were in the community, the investigation of the infants was not rewarding and was suspended, but that of the toddlers was of great interest and is continuing.

From the collection at the Crèche one hundred and eighty-two viruses were isolated from 296 faecal specimens. See Table CIV. This high isolation rate was expected, as other workers have shown that young children living in large groups undergo infection with many different viruses. The predominant enterovirus strains were echovirus type 1, present until late April, and since mid-April, echovirus types 6 and 11. Adenoviruses and Group A Cocksackie viruses were also isolated. Detailed correlation of virus excretion and detectable illness has not been made. The virus isolation rate from referred cases has been much lower than in the Crèche survey, 33 strains being isolated from 433 specimens.

The basic treatment of each specimen used for isolation attempts consisted of inoculation into two tissue cultures, primary monkey kidney and H Ep2, two tubes of each culture

being used. Each culture was given at least one further blind passage, and haemabsorption has been tested for in all specimens except faeces. It is planned that all specimens will be inoculated into two litters of new-born mice when the breeding of the mouse colony is at a level to provide sufficient litters. At present less than half the specimens have been tested in mice. Some specimens were also tested in other types of tissue cultures if viruses such as rubella, cytomegalovirus or varicella were suspected.

Clinicians at the Brisbane Women's Hospital noticed this year that several pregnant women who presented with a clinical picture suggesting an acute intra-abdominal inflammatory process were shown at laparotomy to have either normal findings or a primary peritonitis. Faeces were submitted from five of the patients and from each an enterovirus was isolated, four being echovirus type 1 and the other not yet typed. A collection of faeces was made from 25 normal pregnant women on admission to the Brisbane Women's Hospital. Echovirus type 1 was isolated from one patient. It is not possible to attribute the illness described to the virus infection with certainty, but a more detailed study of future similar cases is indicated.

Virus isolation was attempted from cases in the myocarditis project at the Institute of Forensic Pathology. Faeces and myocardium from 29 patients were examined. Untyped enteroviruses were isolated from the faeces of two children. All other specimens tested were negative.

Blood from many cases of epidemic polyarthritis were referred from various parts of Queensland in the first four months of the year. During the illness there is a rise in titre of antibodies to one or more of the group A arboviruses and infection with Ross River virus is thought to be the cause. Serum samples from 83 patients were sent to the Queensland Institute of Medical Research to be tested for arbovirus antibodies, and 12 patients showed a diagnostic change in titre.

Other studies are continuing and include the investigation of haemagglutinating properties of locally isolated enteroviruses, plaque formation by rubella virus, a survey of urine specimens from new born infants for the presence of cytomegalovirus, variations of culture media for the growth of rubella virus, a trial of primary rabbit embryo tissue culture in the isolation of rubella, the production of a complement fixing antigen for rubella virus, the eradication of *Mycoplasma* from established tissue culture cell lines, a survey of a group of peptic ulcer patients for herpes simplex antibody, an investigation of complement fixing properties of locally isolated type A Cocksackie viruses and complement fixing antibody tests on patients thought to be infected with influenza.

TOXOPLASMA SEROLOGY

The sera of 25 patients with ocular disturbances possibly caused by *Toxoplasma gondii* were tested by the *Toxoplasma* complement fixation test. Antibodies were detected in one patient to a titre of 1:4.

Sera from 56 patients with other abnormalities thought to be caused by *Toxoplasma* were also tested. Antibodies were detected in 5 patients (3 at 1:8; 1 at 1:16; and 1 at 1:64), all of which titres are regarded as significant. The serum with the titre of 1:64 was from the mother of a newborn baby suffering from hydrocephalus with meningitis.

TABLE CIV

Number of specimens from Crèche survey—296

Viruses isolated—

Echovirus type 1	..	..	..	32 (32)*
Echovirus type 6	..	..	..	47
Echovirus type 11	..	..	..	56
Enterovirus (untyped)	..	..	..	17
Group A Cocksackie viruses	..	..	..	18
Adenovirus type 3	..	..	..	2
Adenovirus (untyped)	..	..	..	10
Total	..	..	..	182

Number of specimen referred—433

Viruses isolated—

Echovirus type 1	..	..	..	17 (15)*
Echovirus type 9	..	..	..	2
Enterovirus (untyped)	..	..	..	5
Adenovirus type 2	..	..	..	1
Adenovirus type 3	..	..	..	1
Adenovirus (untyped)	..	..	..	3
Herpes simplex	..	..	..	2
Myxovirus (untyped)	..	..	..	2
Total	..	..	..	33

Miscellaneous diagnoses—

Trachoma	..	..	..	2
Influenza type A	..	..	..	2

* Figures in brackets indicate the number of strains more closely related to the prototype echovirus type 8. Echovirus type 8 has recently been reclassified as echovirus type 1, to which it was found to be closely related.

PARASITOLOGY

The work of this section has once again doubled, largely due to the follow-up surveys after mass treatments at the Brisbane Special Hospital and at the Palm Island aboriginal settlement. In Table CV are set out the results obtained over a period of 12 months following the mass treatment of patients from two wards at the Brisbane Special Hospital. The results of a survey of patients from two other wards at the same hospital are shown in Table CVI. In these latter two wards the results are conservative as very few patients had more than one specimen examined. The finding of *Balantidium coli* trophozoites is of interest as only once previously has this parasite been found at this laboratory.

In June 1965 the entire population of Palm Island was treated for Amoebiasis and Giardiasis. In July, approximately one week after the treatment, specimens were received from 169 persons. In the last seven months 713 specimens have been received from a random selection of 615 aborigines at the settlement. The results of these surveys are set out in Table CVII.

Despite the use of the M.I.F. Stain Preservation Technique, delays occur in placing specimens in this fixative in the wards and this creates diagnostic difficulties on occasions with unidentifiable trophozoites. This work would be greatly facilitated if fresh specimens could be examined, especially at the Special Hospital where mixed infections so commonly occur.

Infestation with tapeworms was diagnosed in three patients. *Taenia saginata* from patients at Gayndah and Caboolture and *Dipylidium caninum* in one from Monto.

TABLE CV

PARASITOLOGICAL SURVEY AT BRISBANE SPECIAL HOSPITAL, GOODNA FARM COLONIES A AND B (AFTER TREATMENT)
(30th June, 1965 to 1st July, 1966)

	Farm Colony A	Farm Colony B
Number of patients examined ..	100	116
Patients with more than 3 specimens ..	87	109
Number of specimens examined ..	641	1,325

RESULTS OF SURVEY OF PATIENTS WITH 3 OR MORE SPECIMENS
(Expressed as percentage of patients)

Parasite	Farm Colony A	Farm Colony B
<i>Entamoeba histolytica</i> trophozoites ..	24.1	29.3
<i>E. histolytica</i> cysts	37.1	22.9
<i>E. histolytica</i> cysts and/or trophozoites	48.0	40.4
<i>Entamoeba coli</i> cysts	46.0	43.1
<i>Iodamoeba butschlii</i> cysts	18.0	19.2
<i>Giardia lamblia</i> cysts	41.0	45.0
<i>Ascaris lumbricoides</i> ova	2.0	..
Hookworm ova	22.0	1.0
<i>Strongyloides stercoralis</i> larvae	13.0	..
<i>Hymenolepis nana</i> ova	32.0	14.7
<i>Trichuris trichiura</i> ova	84.0	65.1
<i>Enterobius vermicularis</i> ova	10.0	4.6

TABLE CVI

PARASITOLOGICAL SURVEY AT BRISBANE SPECIAL HOSPITAL, GOODNA MALE WARD 4 AND FEMALE WARD 5A
(30th June, 1965 to 1st July, 1966)
Results expressed as percentage of patients examined

	Male Ward 4	Female Ward 5A
Total patients	111	33
Total specimens	130	45
Parasite—		
<i>Entamoeba histolytica</i> cysts ..	10.8	6.0
<i>Entamoeba coli</i> cysts	29.7	15.0
<i>Iodamoeba butschlii</i> cysts	18.9	..
<i>Giardia lamblia</i> cysts	6.3	..
<i>Ascaris lumbricoides</i> ova .. .. .	..	..
Hookworm ova	11.7	..
<i>Hymenolepis nana</i> ova	5.4	..
<i>Trichuris trichiura</i> ova	56.8	42.0
<i>Enterobius vermicularis</i> ova	1.0	..
<i>Balantidium coli</i> trophozoites ..	1.0	..

TABLE CVII

RESULTS OF PARASITOLOGY SURVEYS AT PALM ISLAND SETTLEMENT
(Expressed as percentage of population examined)

Parasite	Pretreatment, March, April, 1965	Immediately Post-treatment July, 1965	December, 1965 June, 1966
<i>E. histolytica</i> cysts ..	11.1	7.7	8.5
<i>E. coli</i> cysts	42.2	16.0	44.9
<i>I. butschlii</i> cysts	13.2	2.4	8.5
<i>E. nana</i> cysts	2.4	..	..
<i>G. lamblia</i> cysts	24.0	13.0	23.1
<i>As. lumbricoides</i> ova ..	1.6	0.6	7.8
Hookworm ova	0.3	2.4	3.2
<i>H. nana</i> ova	10.8	9.5	19.2
<i>T. trichiura</i> ova	77.8	80.5	80.8
<i>E. vermicularis</i> ova .. ..	..	..	1.0
Total persons tested	379	169	615

HISTOPATHOLOGY

During the year 7,132 biopsy specimens were submitted and from these 10,836 sections were prepared and examined. From necropsy tissues from country areas 699 sections were examined.

Skin neoplasmas received included 994 basal cell carcinomas, 610 squamous carcinomas, 162 keratoacanthomas and 71 malignant melanomas. These melanomas were all referred to the Queensland Melanoma Project, as were 13 lymph nodes containing secondary deposits of melanoma. In one patient the lymph node metastasis occurred 20 years after the primary malignant melanoma was excised.

Other lesions of both epidemiological and pathological interest were: Chromoblastomycosis (5) "Cat-scratch" lymphadenitis (5), *Toxocara canis* infection of the eye (1), Leprosy (4) and Melioidosis (2).

EXFOLIATIVE CYTOLOGY

An increase of approximately 25 per cent. in the volume of work this year has been due mainly to the great number of sputa submitted. The majority have been embedded in paraffin, sectioned at three levels and stained with haematoxylin and eosin. The preliminary impression formed last year that examination of the specimen at three levels results in a worthwhile increase in positive findings has been confirmed. In 103 positive specimens, malignant cells were found at all three levels in 66, at two levels in 25 and at only one level in 12 cases.

A follow-up for the years 1964 and 1965 has recently been concluded which shows better diagnostic results for 1965 when the paraffin embedding technique was introduced, than for 1964 when smears were examined. In 1964 only 22 per cent. of patients considered clinically to have a malignant neoplasm of the lung were detected by cytology—in 1965 a detection rate of 42 per cent. was reached.

This rate cannot be considered satisfactory and together with the Director of Tuberculosis a reappraisal was made of the place of sputum cytology under existing conditions. It was concluded that cytology should be reserved for those patients in whom the clinical and radiological features are more in favour of a malignant than a tuberculous etiology, in whom the lesion is beyond bronchoscopic range, and who are unlikely to have an early thoractomy. The importance of ensuring that at least three satisfactory specimens are obtained from each case for investigation has also been stressed.

THE INSTITUTE OF FORENSIC PATHOLOGY

During the year 1,010 coronial necropsies were performed, an increase of 66 on the previous year. Because of the steadily increasing amount of work at the Institute it was found necessary to appoint an additional attendant.

Many of the necropsies involve extensive investigations and in these it is customary to withhold certificates until bacteriological, biochemical and histopathological examinations are completed. Of necessity numerous specimens are referred to the Government Analyst's Department for toxicological

examination and the excellent co-operation received from this Department is much appreciated. Blood and urine alcohol estimations are made as a routine on all traffic accident fatalities over the age of fourteen who die within twelve hours of the accident.

The bound volumes of post-mortem reports, from 1935 onwards, are a valuable source of research material and are constantly used in various projects. The histopathology slides from these cases are also of value for reference.

Now that the virology laboratory has been established more virological investigations are being made from necropsy material. This applies particularly to "cot deaths" and cases included in the Myocarditis Project. Improved techniques for the collection of specimens for virological studies have been introduced.

The study of injury patterns in traffic accident fatalities continues and it is hoped subsequently to publish a further progress report on this subject.

Comparatively little is known of the causation and effects of traffic accidents in rural areas and in order to rectify this, Traffic Accident and Personal Injury reports have been sought from Government Medical Officers. This is part of a project sponsored by the Traffic Injury Sub-committee of the N.H.M.R.C. and to date 184 reports have been received.

In an attempt to maintain some surveillance over the standard of coronial necropsies in centres outside the metropolitan area copies of these necropsy reports are forwarded to the Institute for scrutiny. During the period January to December 1965, 1,057 necropsies were performed in the extra-metropolitan areas of the State and 1,044 reports were received. Circular letters are issued periodically giving advice concerning technique and interpretation and advising on methods for forwarding tissues for microscopic examination or analysis.

Specimens from an increasing number of coronial necropsies in the country are referred to the Laboratory of Microbiology and Pathology for further investigation, mainly histopathological, and during the last twelve months tissues from 180 necropsies have been examined. It is felt that this, together with the supervision of the reports must play a part in improving the standard of forensic pathology throughout the State but in many cases this is still far from satisfactory.

In 1965 a survey of the incidence of myocardial infarction and coronary atherosclerosis in coronial necropsies in Brisbane was completed. This survey was part of a world-wide investigation conducted by the International Society of Geographical Pathology.

A booklet on necropsy technique is being prepared for distribution to Government Medical Officers and medical students.

MYOCARDITIS PROJECT

This project, commenced in January 1965, has again been supported by a grant from the National Heart Foundation with Dr. D. Brand as Research Fellow.

The study proceeded in accord with the original aim to examine microscopically the hearts of people under the age of 40 dying suddenly from some accidental cause. Known illness or cardiac abnormality excluded many cases.

To date 210 hearts have been examined histologically, the majority at three complete ventricular levels but thirty of these have been examined at 18 levels. Of these 210 hearts 117 have been accepted for the series, the other 93 cases being from people with some known or suspected disease prior to death. These latter may be of value for comparison later.

The following is a summary of the main findings:—

- A. Widespread destructive myocarditis has not been found in this series.
- B. Focal granulomatous myocarditis has been detected in 12 (10 per cent.) of the cases.
- C. Foci of myocardial fibre cell death with cellular reaction were common and have been found in 66 (56 per cent.) of the hearts examined at 3 levels, and in all of the 29 hearts examined at 18 levels.

The frequency of these histological lesions in the hearts of apparently normal individuals suggests that the criteria for the microscopic diagnosis of myocarditis may need revision. The common small foci may be part of a normal physiological process or could represent some pathological entity of, as yet, unknown aetiology.

Since January 1966 virological studies of tissues from 30 of these cases have yielded only 2 enteroviruses, a finding of extremely doubtful significance. An occasional cyst of toxoplasma was found in the myocardium of one car driver killed accidentally.

SUDDEN DEATHS IN ASTHMA

The investigation of sudden death in asthma continues. It seems unlikely that the solution of these deaths will be found from the necropsy findings alone. Equally important is an immediate inquiry into the clinical history especially the drugs used and their method of administration. In the last 21 deaths from asthma referred to the Brisbane Coroner such inquiries have revealed a history of self-administered overdosage of orciprenaline in 16 cases and isoprenaline in one. This association of sudden death and excessive use of inhalers appears to be a significant finding. The danger associated with the parenteral administration of adrenaline concurrently with aerosol isoprenaline or orciprenaline needs to be stressed.

Arrangements are being made to have the concentration of orciprenaline and isoprenaline in the urine estimated in any subsequent cases.

It is possible that a comparison of the gross and microscopic pathology of those dying from asthma and of known asthmatics dying from some accidental cause would be a valuable investigation.

TIME OF SURVIVAL OF TRAFFIC ACCIDENT FATALITIES

No reliable information has hitherto been available concerning the time interval between the accident and death in traffic accident fatalities. For this reason a retrospective study, supported by a grant from the Australian Road Research Board, was made of 2,081 road accident deaths occurring in Brisbane during the period 1946 and 1965. Data were taken out from the post-mortem records of age, participant type, sex, time of accident, place of accident and duration of survival.

From a preliminary survey of the data it would appear that approximately 70 per cent. of all deaths from traffic accidents occur within 6 hours. Further analysis is proceeding in a search for significant trends associated with the year, age and site of accident, for each type of participant.

ATTENDANCES AT COURT

During the year seven members of the staff gave evidence in court on 211 occasions, 75 being outside the metropolitan area. These court appearances cause serious interruption to the work of the laboratory. Cases are frequently postponed and the date of appearance altered several times. It is becoming increasingly difficult for the personnel involved to arrange their recreation leave in accordance with the regulations. Some staff members have had their leave interrupted as many as five times by court cases.

The situation would be eased if statements could be accepted in the lower courts obviating the necessity for a personal appearance. In many cases this involves a long and costly journey to give purely formal evidence. Much time and money could be saved if such statements were to be admitted by agreement between the legal representatives for the prosecution and defence. This matter warrants urgent investigation.

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TABLE CVIII
2. STATISTICAL SUMMARY, 1965-66
1. BACTERIOLOGY
Specimens of Human Origin (Non-Tuberculous)

Specimen										Examination			Totals
										Culture	Microscopy	Antibiotic Sensitivity	
Swabs—													
Throat and Nose										194	77	49	320
Urethra, Cervix, Anus, Bartholin's Glands										1,764	3,674	33	5,471
Ear										52	12	38	102
Eye										40	6	18	64
Other										117	24	61	202
Pus										188	24	135	347
Pleural Fluid										7	5	1	13
Cerebrospinal Fluid										44	57	4	105
Serous Exudate .. .. .										..	997	..	997
Sputum										498	492	181	1,171
Blood .. .. .										..	50	1	51
Urine										4,274	5,592	1,357	11,223
Faeces										514	211	29	754
Miscellaneous										20	8	7	35
Total 1965-66										7,712	11,229	1,914	20,855
Total 1964-65 .. .. .										.. .. .	.. .. .	.. .. .	19,602

Mycology

Specimen										Examination			Totals
										Culture	Microscopy	Antibiotic Sensitivity	
Skin	..	..	..	..	..	..	..	..	..	57	49	6	112
Nail	..	..	..	..	..	..	..	..	..	9	9	..	18
Sputum	..	..	..	..	..	..	..	..	..	5	5	1	11
Miscellaneous	..	..	..	..	..	..	..	..	..	8	7	2	17
Total 1965-66	..	..	..	..	..	..	..	..	..	79	70	9	158

Tuberculosis Section

Specimen										Examination			Totals
										Culture	Microscopy	Animal Inoculation	
Sputum	..	..	..	..	..	..	..	..	..	12,280	12,280	188	24,748
Sputum (Medi-Haler)	..	..	..	..	..	..	..	..	..	2,758	2,758	33	5,549
Gastric Aspiration	..	..	..	..	..	..	..	..	..	263	..	101	364
Urine	..	..	..	..	..	..	..	..	..	534	..	229	763
Pus	..	..	..	..	..	..	..	..	..	25	19	29	73
Pleural Fluid	..	..	..	..	..	..	..	..	..	42	42	41	125
Cerebrospinal Fluid	..	..	..	..	..	..	..	..	..	13	14	12	39
Miscellaneous Fluid	..	..	..	..	..	..	..	..	..	15	15	15	45
Bronchial Washing	..	..	..	..	..	..	..	..	..	6	6	3	15
Lung Tissue	..	..	..	..	..	..	..	..	..	14	14	11	39
Cultures	..	..	..	..	..	..	..	..	..	..	83	43	126
Tissue	..	..	..	..	..	..	..	..	..	23	23	31	77
Bone Marrows	..	..	..	..	..	..	..	..	..	9	9	8	26
Miscellaneous	..	..	..	..	..	..	..	..	..	20	20	40	80
Totals	..	..	..	..	..	..	..	..	..	16,002	15,283	784	32,069
Asbestos Bodies	..	..	..	..	..	..	..	..	..	Identification	..	..	8
Culture	..	..	..	..	..	..	..	..	..	Identification (atypical strains)	..	..	17
										Sensitivity test (Streptomycin, P.A.S., I.N.A.H.)	..	..	244
										Sensitivity test (Viomycin, Pyrazinamide, Cycloserine and Ethionamid)	..	..	295
											..	..	244
										Total 1965-66	..	..	32,877
										Total 1964-65	..	..	37,276

TABLE CVIII—continued
B. Foods and Waters

Specimen									Examination						Totals
									Culture		Plate Count		Reductase		
Water	..	..	..	..	..	..	..	..	1,777	1,775	..	..	..	3,552
Milk	..	..	..	..	..	..	..	..	849	848	838	..	..	2,535
Cream	..	..	..	..	..	..	..	..	44	44	42	..	..	130
Other Milk Products	..	..	..	..	..	..	..	..	42	41	..	..	..	83
Meats and Fish	..	..	..	..	..	..	..	..	59	17	..	..	..	76
Miscellaneous	..	..	..	..	..	..	..	..	103	2	..	..	..	105
Total 1965-66			..	..	..	..	..	..	2,874	2,727	880	..	..	6,481
Total 1964-65			..	..	..	..	..	..	..	..	..	..	..	4,545

C. Various Materials

Specimen								Object of Examination				Number
Disinfectants and Antiseptics								Rideal-Walker Co-efficient				47
Bottles								Sterility				117
Miscellaneous								Sterility				52
Bacterial Cultures								Culture				167
								Identification				4
								Total 1965-66				387
								Total 1964-65				312

2. PHAGE TYPING

3. SEROLOGY—continued

—	Number
Cultures Prepared	2,892
Coagulase Tests	1,668
Antibiotic Sensitivity Tests	2,803
Cultures Phage Typed at R.T.D.	4,467
Cultures Phage Typed at 1,000 X R.T.D.	1,312
Total 1965-66	13,142
Total 1964-65	8,548

—	Number
Serum Agglutination Tests (Quantitative)	1,772
Paul Bunnell Tests	5,045
Leptospiral Strains typed (10)—	
Agglutination Tests Performed in Typing	1,680
Absorption Tests Performed in Typing	168
Antisera Prepared	35
Complement Fixation Tests—	
Coxiella burneti (Phase I)—	
Routine	18
Quantitative	12
Coxiella burneti (Phase II)—	
Routine	6,054
Quantitative	660
Complement Fixation Tests—	
Typhus Fever Murine (Soluble)—	
Routine	7
Quantitative	1
Psittacosis (Miyagawanella ovis)—	
Routine	3,160
Quantitative	257
Mycoplasma pneumoniae—	
Routine	100
Quantitative	100
Kolmer Wassermann (Serum)—	
Routine	13,519
Quantitative	151
Reiter Protein—	
Routine	2,240
Quantitative	70
Kolmer Wassermann (C.S.F.)	542
Reiter Protein (C.S.F.)	45
V.D.R.L.	13,417
Total, 1965-66	173,708
Total, 1964-65	155,096

3. SEROLOGY

—	Number
Serum Agglutination (Screen)—	
Salmonella typhosa (O)	5
Salmonella typhosa (H)	4,985
Salmonella paratyphi (H)	4,985
Salmonella schottmülleri	4,985
Proteus OX19	4,986
Proteus OXK	4,986
Brucella abortus	4,986
Leptospira icterohaemorrhagiae	6,298
Leptospira canicola	6,298
Leptospira broomi	5,291
Leptospira zanonii	6,298
Leptospira robinsoni	5,291
Leptospira australis	6,298
Leptospira bratislava	5,291
Leptospira pomona	6,298
Leptospira grippotyphosa	6,298
Leptospira medanensis	6,298
Leptospira kremastos	6,298
Leptospira mini	5,291
Leptospira hyos	6,298
Leptospira celledoni	6,298
Leptospira autumnalis	6,298
Leptospira javanica	1,069
Leptospira ballum	1,069
Leptospira cynopteri	1,069
Leptospira bataviae	1,069
Streptococcus MG	10
Cold Agglutinins	9

TABLE CVIII—continued

4. BIOCHEMISTRY

Specimen	Examined For	Number
Whole Blood ..	Urea	2,094
	Glucose	264
	Uric Acid	1,107
	Pigments	30
	Bromide	5
Serum	Cholinesterase	86
	CO ₂ combining power	22
	Protein	2,294
	Cholesterol	598
	Bilirubin	897
	Chloride	275
	Calcium	273
	Inorganic phosphate	204
	Acid phosphatase	86
	Alkaline phosphatase	935
	Thymol turbidity	805
	Thymol flocculation	804
	Zinc sulphate turbidity	805
	Paper electrophoresis	1,188
	Amylase	42
	Sodium	217
	Potassium	179
	Serum glutamic oxalacetic transaminase	464
	Serum glutamic pyruvic transaminase	569
	C. reactive protein	22
	Fibrinogen	2
Cerebrospinal Fluid	Protein	86
	Globulin	38
	Chloride	53
	Glucose	53
	Colloidal Gold Reaction	1,032
Pleural Fluid ..	Protein	3
Ascitic Fluid ..	Protein	2
Urine	Albumin	5,565
	Sugar	5,566
	Bilirubin	6
	Urobilin	3
	Urobilinogen	7
	Diastase	6
	Calcium	7
	Coproporphyrins	2
	Porphyrins	2
	Phosphate	1
	Urea	1
	Haemosiderin	1
	Uric acid	1
	Urates	1
	Pigments	1
	Chloride	1
Faeces	Total, Split and Unsplit Fats	121
	Occult blood	43
	Trypsin	1
Renal Calculi ..	Chemical constitution	66
Functional Tests ..	Glucose tolerance tests	279
	Urea clearance tests	26
	Urea concentration tests	26
	Fractional test meals	14
	Total, 1965-66	27,281
	Total, 1964-65	25,968

5. HAEMATOLOGY

	Number
Cell Counts—	
Red cells (Total)	120
Red Cells (Stippled)	78
Reticulocytes	23
White Cells (Total)	4,289
White Cells (Differential)	4,972
Platelet count	146
Eosinophile count	34
Haemoglobin	11,801
Haematocrit	7,975
Sedimentation Rate	994
Coagulation Time	65
Bleeding Time	62
Prothrombin Time	322
Red Cell Fragility	5
L.E. Cells	47
Latex Slide Test (R.A.)	368
Blood Grouping (A.B.O.)	4,351
Blood Grouping (Rh)	4,351
Blood Grouping (M and N)	3
Rh Antibodies	1,300
Coombs Test	32
Marrow Smears	52
Examination of Smears	6,147
Total, 1965-66	47,537
Total, 1964-65	43,108

6. PARASITOLOGY

Specimen	Object of Examination	Number
Faeces	Amoebae (Cysts and Vegetative)	3,505
	Helminth ova	3,505
Soil	Amoebae (Cysts and Vegetative)	7
	Helminth ova	7
Pus	<i>Trichomonas vaginalis</i>	184
Blood	<i>Plasmodium</i> sps.	31
Helminth	Identification	13
Total, 1965-66		7,252
Total, 1964-65		3,214

7. VARIOUS TESTS

	Number
Slide Test (Pregnancy)	1,883
Slide Test (Pregnancy) (Quantitative)	12
Sweat Test	1
Seminal Fluid Assessment	15
Total, 1965-66	2,911
Total, 1964-65	2,588

8. HISTOLOGY

Tissue Sections Prepared	Number
Human—	
Biopsy (specimens received 7,132)	10,836
Medico-Legal Tissues	699
Animal Tissues	3
Total 1965-66	11,538
Total 1964-65	12,024

9. EXFOLIATIVE CYTOLOGY

Specimen	Number
Sputum	2,344
Bronchial or Tracheal Washing	34
Pleural Fluid	66
Miscellaneous	68
Total, 1965-66	2,512
Total, 1964-65	2,007

10. MEDICO-LEGAL

Specimen	Object of Examination	Number
Clothing and Various Articles	Blood	292
	Spermatozoa	152
Vaginal Smears	Spermatozoa	76
Tissue	Histopathology	685
Blood	Grouping	16
Bloodstains and Scrapings	Presence of Blood	53
	Determination of Blood Group	75
Hair	Identification	13
Skeleton	Identification	6
Total 1965-66		1,368
Total 1964-65		1,405

TABLE CVIII—continued

11. POST MORTEM					
—				Number	
Post-mortem Examinations ..	Total, 1965-66			1,010	
	Total, 1964-65			944	
12. INSTITUTE OF FORENSIC PATHOLOGY					
Specimen		Examination			Number
HISTOLOGY					
Tissue	Post Mortem			2,059	
	Frozen sections			66	
	Special stains			84	
	Heart sections (Research project)			2,260	
	Special stains			18	
	Total, 1965-66 ..			4,487	
Total, 1964-65 ..			4,781		
BIOCHEMISTRY					
Whole Blood ..	Urea			11	
	Barbiturate			49	
Serum	Chloride			6	
	Protein			6	
Urine	Barbiturate			45	
	Sugar			3	
	Reducing Substances ..			3	
	Acetone			3	
	Acetoacetic Acid			3	
Cerebrospinal Fluid	Urea			2	
	Total, 1965-66 ..			131	
	Total, 1964-65 ..			217	
BACTERIOLOGY					
Swabs—					
Lung and	.. ..	Culture .. ..	.. ..	55
Bronchial					
Bowel					
Ears					
Pericardium	.. ..	Culture .. ..	.. ..	1
Blood .. ..	.. ..	Culture .. ..	.. ..	22
Cerebrospinal Fluid	.. ..	Culture .. ..	.. ..	5
Vaginal and Cervical Smears .. ..	.. ..	Spermatozoa .. ..	.. ..	3
Anal Smear ..	.. ..	Spermatozoa .. ..	.. ..	1
Total, 1965-66 ..			150		
Total, 1964-65 ..			163		

13. MATERIAL SUPPLIED.				
<i>To hospitals, private practitioners and local authorities</i>				
Diagnostic kits for tuberculosis .. ..	..	..	..	450
Diagnostic kits for bacteriology .. ..	..	..	..	7,480
Diagnostic kits for haematology and serology	..	..	..	11,630
Diagnostic kits for biochemistry .. ..	..	..	..	730
Diagnostic kits for virology .. ..	..	..	..	300
Total 1965-66 .. ..	..	..	..	20,590
Total 1964-65 .. ..	..	..	..	14,951

14. MEDIA				
Slopes .. ..	..	..	..	75,588
Plates .. ..	..	..	..	54,514
Tubes and bottles .. ..	..	..	..	213,732
Total 1965-66 .. ..	..	..	..	343,834
Total 1964-65 .. ..	..	..	..	142,805
Chemical Solutions .. ..	..	..	..	1,610 litres
Stains .. ..	..	..	..	222 litres
Total 1965-66 .. ..	..	..	..	1,832 litres
Total 1964-65 .. ..	..	..	..	1,812 litres

15. ANIMAL BREEDING STATION				
(November, 1965 to June, 1966)				
Animals Provided—				
Guinea pigs .. ..	..	..	..	512
Rabbits .. ..	..	..	..	35
Animals Bled—				
Rabbits (30 cc. each) .. ..	..	..	..	525
Guinea pigs (10 cc. each) .. ..	..	..	..	285
Sheep (100 cc.) .. ..	..	..	..	24

QUEENSLAND GOVERNMENT CHEMICAL LABORATORY

Director, Government Analyst and Chief Inspector of Explosives: I. L. B. HENDERSON, B.Sc., F.R.A.C.I.

Deputy Director and Inspector of Explosives: D. MATHERS, M.Sc., A.R.A.C.I.

The Government Chemical Laboratory provides a chemical, analytical and advisory service for State Government Departments. It also provides a complete service in Queensland for the Commonwealth Government Departments of Customs and Excise and of Primary Industry, and carries out analytical work for other Commonwealth Departments, including the Defence Forces, and for the Territory of Papua and New Guinea. Payment is received for these services rendered to the Commonwealth.

The number of samples examined during the twelve month period was 33,190, slightly above the record number for 1964-65. The table below (Table CIX) shows the numbers examined in each of the preceding five years—

TABLE CIX

Year				Total Number of Samples
1960-61	..	..	..	27,553
1961-62	..	..	..	29,133
1962-63	..	..	..	26,023
1963-64	..	..	..	31,993
1964-65	..	..	..	32,888

An extremely wide range of analytical work is involved in the analyses of these samples which cover the needs of the various Government Departments. In many cases analyses now required are more comprehensive and sophisticated than was the case some years ago.

The following table (Table CX) shows the numbers and sources of samples examined in the past twelve months:—

TABLE CX

SHOWING SOURCES AND NUMBERS OF SAMPLES

Source	Number
State Departments—	
Health	8,023
Health (explosives)	3,018
Police	139
Coroner	998
Mines	18
Geological Survey	2,278
Coal Board	694
Harbours and Marine	234
Irrigation and Water Supply	2,093
Local Government	525
Railways	83
State Stores	696
Works	1,007
Housing Commission	6,045
Micro-Biology and Pathology	624
Government Medical Officer	324
Industrial Medicine	223
Others	644
Commonwealth Departments—	
Primary Industry	2,951
Customs and Excise	1,198
Others	93
Hospital Boards	772
Medical Profession	232
Public	278
	<hr/>
	33,190

The prevailing staff shortage was relieved to some extent at the beginning of 1966 when three graduates and three cadets joined the staff, two of the graduates having studied under Fellowships awarded by the Department. However, subsequent resignations and the impending retirement of a Chief Chemist have already partly nullified the advantages gained by this recruitment. The Laboratory at present has one Fellowship student at the University of Queensland and one at the Queensland Institute of Technology. Several members of the staff are studying part time for higher degrees.

The completion of the two laboratories in the former University of Queensland Department of Physiology building and their occupation by the Water and Paint divisions has eased the accommodation problem for these two divisions. Additional space for other sections of the Laboratory will shortly become available on the floor above the main laboratories in an area vacated by the Laboratory of Micro-Biology

and Pathology. Construction of the proposed Riverside Drive-way will entail the demolition of the auxiliary buildings presently housing the ore crushing plant and the mechanic's workshop and alternative accommodation will have to be provided for these and other services.

Two senior members of the staff made interstate visits during the year. One, in company with an officer of the Mines Department, visited selected collieries in New South Wales to investigate the occurrence and detection of "bottom gas", the unrecognised presence of this gas having resulted in explosion and loss of life in that State some months previously. The other attended the annual conference of Technical Officers in Industrial Hygiene, and, immediately afterwards, a Symposium on the Identification and Estimation of Traces of Volatile Compounds conducted by the Royal Australian Chemical Institute. The opportunities that such conferences present in meetings with experts from other States and in facilitating open discussion on problems of mutual interest are invaluable, particularly to officers from Queensland which is somewhat isolated from the larger industrial centres. The Deputy-Director, on behalf of the Education Department, visited Mt. Isa Mines Ltd., the Townsville Copper Refinery, and Mt. Morgan Ltd., in order to assess the requirements and make recommendations for Assay courses in Mining and Metallurgy at the Queensland Institute of Technology.

Following complaints by a Government institution an investigation was carried out on the shrinkage of textiles following laundering. Few standard methods are laid down in this field and these do not appear to be completely satisfactory. Comparative tests were carried out on a variety of textiles, using standard methods, household methods, and mechanised institutional methods, which are necessarily somewhat harsher on fabrics. The tests indicated that the normal household automatic or semi-automatic machine gave results most comparable to the washing methods of the institutions and should prove a satisfactory method of testing the percentage shrinkage before Government purchase of textiles.

All sections of the Laboratory and Office staff have been fully extended during the year and it is becoming increasingly difficult to keep up with the influx of samples. It is to be hoped that the response to advertisements for staff to fill vacant positions will be adequate.

New apparatus purchased during the year included an Atomic Absorption Spectrophotometer and additional equipment for Gas Chromatography. A Martindale Wear and Abrasion Tester for textiles is expected to be delivered in the near future.

The four Government bulk explosives magazines at Helidon, Bajool, Brookhill and Queerah now come under the control of the Laboratory which carries out stability tests on samples of all explosives entering the State and certifies them as safe for storage, transport and use. The Laboratory also issues licenses for the import and export, manufacture, storage and carriage of explosives. A report on the administration of "The Explosives Acts, 1952 to 1963," is appended.

Sectional reports which follow show in some detail the work of the Laboratory:—

SECTION 1

FOODS, DRUGS AND WATERS

H. G. DUNSTAN, B.Sc., A.R.A.C.I.—Officer in Charge

Table CXI gives the source and number of the samples examined.

TABLE CXI

Department						Number of Samples
Health	..	..	..	..	..	8,023
Irrigation and Water Supply	..	..	..	..	..	2,093
Other Government Departments	..	..	..	..	..	848
Local Government	..	..	..	..	..	525
Public	..	..	..	..	..	138
Total	..	..	..	..	..	11,627

TABLE CXII

Summary of samples of foods, drugs and articles examined for the Department of Health.

Nature of Sample						Number of Samples
Beverage or cordial	..	..	..	..	..	471
Bread	..	..	..	..	..	474
Cereal	..	..	..	..	..	107
Confectionery	..	..	..	..	..	50
Fish	..	..	..	..	..	47
Fruit	..	..	..	..	..	76
Meat	..	..	..	..	..	384
Milk—official	..	..	..	..	..	2,992
Milk—unofficial	..	..	..	..	..	66
Milk product	..	..	..	..	..	80
Spirituos liquor	..	..	..	..	..	75
Vegetable	..	..	..	..	..	12
Miscellaneous food product	..	..	..	..	..	239
Cosmetic	..	..	..	..	..	28
Cleanser, Disinfectant	..	..	..	..	..	26
Drug, medicine	..	..	..	..	..	619
Paint, paint scraping	..	..	..	..	..	117
Pencil, Crayon	..	..	..	..	..	46
Tobacco	..	..	..	..	..	513
Toy	..	..	..	..	..	55
Miscellaneous	..	..	..	..	..	195
Total	..	..	..	..	..	6,672

The miscellaneous samples include:—bait, baking dish, bedspread, flour bag, food colour, greaseproof paper, plastic drink cooler, preserving fluid, synthetic sweetening compound, sawdust, soil, sterilizing outfit.

TABLE CXIII

Details of legal samples taken by Inspectors in accordance with the provisions of “The Health Acts, 1937 to 1964.”

Nature of Sample					Number Examined	Passed	Failed
Milk	..	..	..	..	2,992	2,831	161
Minced meat	..	..	..	..	182	138	44
Sausage	..	..	..	..	79	60	19
Paint	..	..	..	..	62	60	2
Paint scraping	..	..	..	..	16	4	12
Cream	..	..	..	..	11	11	0
Toy	..	..	..	..	11	0	11
Spirituos liquor	..	..	..	..	6	1	5
Bread	..	..	..	..	4	4	0
Miscellaneous	..	..	..	..	3	0	3
Totals	..	..	..	..	3,366	3,109	257

MILK

Drought conditions affected the quality of milk samples received in the first half of the year and almost 80 per cent. of the substandard milks was received in this period. Improvement in the second half of the year was sufficient to give reasonably good overall averages for the year.

Of the 2,992 legal samples, 2,829 samples (94·5 per cent.) were satisfactory.

The 163 failures included:—13 with added water, 67 deficient in milk-fat and 83 deficient in other requirements.

The average fat content was 3·95 per cent.

The watered milks were obtained at Brisbane (4), Goondiwindi (2), Harrisville (1), Ipswich (1), Rockhampton (2), Surfers’ Paradise (2), Toowoomba (1).

Bottled milk was checked regularly for correctness of pasteurisation and no faults were evident. An instance of an incorrect date mark on the cap of one bottle was reported.

Determination of the chlorinated pesticides present in the bulk milks revealed only small proportions.

None of the 28 flavoured milks examined was below standard. Permitted colouring was not declared in the labels of some samples.

MEAT

Preservative was found in 44 samples of minced meat out of the 182 legal samples received. Sulphur dioxide is added to minced meat for the purpose of maintaining the red colour of fresh meat. The addition of preservative has been prohibited for many years but despite consistent sampling and severe penalties this adulteration persists.

Sausages (79 legal samples) were examined and 55 conformed with the standard. Of the others, 6 contained more than the permitted proportion of sulphur dioxide (3·5 grains

to the pound), 14 were deficient in meat content, 2 contained excess fat and 2 contained less starch than the required proportion (3 per cent.).

FLOUR

Regular examination of the products of the flour mills is necessary to ensure the maintenance of required bread standards. During the year 107 samples were examined and only a few minor faults were reported.

The average protein content of the white flours was 12·2 per cent. and adequate for baking good quality bread.

BREAD

The immense survey of the bread supply of Queensland continued. Following 392 samples in the previous year, 474 further samples were collected this year. Apart from the Brisbane area, at least 62 towns contributed to the pool of samples.

The examinations combined analysis of composition and assessment of quality.

In composition, 66 breads were found to be deficient, a greater proportion than last year. Of these, 34 wholemeal or brown breads contained insufficient wholewheat flour, 12 “protein-rich” breads were low in protein, 14 milk breads failed in milk-solids content and 6 fruit breads were short in fruit. The deficiencies, in many instances, were slight.

The quality of the bread was satisfactory in that only 11 were regarded as below a fair standard. These included:—4 slightly underbaked, 3 with doughy lumps or streaks in the crumb, 3 with burnt crust and 1 with low volume and irregular shape.

Apart from the above survey, a further 61 loaves were supplied by the Department of Weights and Measures and these were tested for weight of dry substance and 14 also for milk-solids content.

SOFT DRINKS

A large number (471) of soft drinks and cordials was received and 53 were found unsatisfactory. The main cause of failure was the use of more preservative than is permitted and 41 samples showed this fault. While no gross excesses were revealed more rigid control by manufacturers is necessary. Fruit juice was insufficient in 6 fruit drinks, excess alcohol was found in 3 brewed drinks, excess saccharin in 2 brewed drinks and excess caffeine in 1 kola drink.

Turbidity in a sample of sarsaparilla was due to the presence of a vegetable gum and overfilling of bottles was again criticized, but the outstanding sample was a bottle of “Cheery Cheer” from which both flavour and sugar had been omitted.

CONFECTIONERY

The only complaint against the 50 samples of sweets was the presence of non-permitted colouring (Rhodamine B) in one manufacturer’s products. Though formerly allowed, this dye is now considered possibly harmful and has been rejected from the small list of permitted colourings. Almost every coloured food submitted to the laboratory is now checked for the presence of non-permitted dyes.

FRUIT

Fresh fruits are examined chiefly for presence of residues of pesticides.

Apples (10 samples) were tested for lead, arsenic, mercury and D.D.T., and were found to conform with permitted tolerances.

Pineapples were tested for—Diuron (10 samples), Beta-hydroxy ethyl hydrazine (18), Alpha-naphthyl acetic acid (1). These samples were from experimental crops, were not for sale, and were to determine permissible spraying procedures.

Grapes contained permissible proportions of D.D.T. (0·05 p.p.m.), Dieldrin (0·01 p.p.m.), Copper (2·5 p.p.m.) and were free from arsenic, organic phosphates and diuron.

Tomatoes contained Maneb and Cuprox in small proportions.

Oranges, apples and plums submitted as suspect samples were free from harmful substances.

Canned fruits (18 samples) conformed with the standard and were good quality products.

NOTES ON OTHER FOODS

All of 37 samples (11 legal, 26 unofficial) of Cream were satisfactory.

A survey of Ice Cream included the popular half-gallon cans. The standard requires, at least, 27 ounces of food solids to the gallon and 3 of the 17 samples were slightly below this quantity. All samples satisfied the other requirements of the standard.

Fifty samples of fish were examined. These included: fresh-water fish for presence of parasites, smoked fish, prawns, crab-meat, anchovies, sardines, kipper snacks, caviare, scallops marinade, oysters. Samples of turtle meat were also examined.

Propylene glycol was found in 2 complaint samples of frozen poultry in proportions 0.22 and 0.11 per cent. using gas chromatography. This substance is used in freezing solutions.

Ice-blocks (42 samples) were satisfactory.

Artificial sweetening compounds (5 samples) were fit for use in food and were correctly labelled.

In a can of Corn and Tomatoes there was more tomato than corn. Ingredients should be named in order of dominance.

The poly-unsaturated fatty acid content of table margarines was determined and the claims found correct.

A large number of complaint samples or foods suspected of causing illness was received from the public, one person alone submitting 46. Many complaints of unclean milk bottles were due to incomplete cleansing of dried milk film from the interior of the bottles.

DRUGS AND MEDICINES

The high total (619) of entries in this section is mainly due to numerous submissions of deteriorated drugs for safe disposal. A certificate giving identity and quantity is required as account must be kept of many of these drugs.

Thirteen samples of antacid preparations were analysed and it was found that the declared compositions were correct. The claims made for the preparations were acceptable.

Proprietary mixtures (9) consisting chiefly of saline purgatives were checked and were of stated composition. Extravagant claims were found.

Sodium Bicarbonate, Tincture of Iodine, Eucalyptus, Calamine and Glycerine were of the standards of the British Pharmacopoeia.

The composition of one brand of headache powders varied too far from that stated. Later samples showed correct formulation.

Cycloserine capsules were deficient in active drug owing to deterioration.

Suspect drugs submitted by the public included Amytal, Veracolate, Glucodin, Mycostatin, Bynoids, Myadec and showed no abnormal features.

Preparations were checked for correct classification in the Poisons Schedules.

In addition, 61 samples from the Brisbane General Hospital required checking for all requirements of the British Pharmacopoeia or other authority. The stringent checking required for these drugs is a considerable demand on the capacity of the section.

COSMETICS

Results of testing of cosmetics included:—

Hair sprays (7) were tested for and found free of methylene chloride.

Nail Hardeners (2) contained formaldehyde.

Eye lash preparation—the claim to be an eye-lash grower was false.

Hair preparations—the presence of lead compounds in 2 samples was a contravention of the Health Acts.

Lipstick—the type of dye present caused lip irritation (photo-sensitization) in a susceptible person.

LEAD

The samples of paint seized by Inspectors during the painting of buildings showed 60 of the 62 samples free from lead. It is now exceptional to find lead in these paints.

Paint scrapings, as usual, gave a much greater incidence of lead.

Toys were again inspected this year, the purpose being to ensure freedom from lead. Unofficial checking produced 55 samples and from these there ensued 11 legal samples which all contained lead.

Pencils and Crayons (46) were also examined for lead content and five were unsatisfactory.

GENERAL

Assistance was given to Government Departments other than the Department of Health. This may be summarised:—Army (bread, sausages, vitamins C and B1, anti-mite fluid); Railways (rum); Native Affairs (tuba—a spirituous liquor); Civil Aviation (ice alleged to have fallen from 'plane); Works

(Roof paint, water from roof); Education (drinking straws); Forestry (water for arsenic content); Primary Industries (Flower inductant, fruits for residues); Harbours and Marine —Fisheries Branch (Dead fish and water from Breakfast Ck.); State Stores Board (tobacco, washing powder); Papua and New Guinea (Canned meat, hair dyes).

MISCELLANEOUS

Five samples of toilet bowl cleanser to be automatically dispensed into the cistern were tested and two were found damaging to polystyrene fittings.

Nine suspected dog baits were examined and one contained strychnine.

Dead fish and water from Breakfast Creek were found to contain cyanide and copper in small proportions but sufficient to be lethal to fish.

Ice said to have fallen from an aircraft was deduced to be frozen Sydney water, not Brisbane water nor condensed atmospheric moisture.

Contraband cigarettes and tobacco (513 samples) and beer (53 samples) from the Queen's Warehouse were tested for fitness for sale.

WATERS SUB-SECTION

W. N. CARVOSSO, Dip. Ind. Chem., A.R.A.C.I.—
Officer in Charge

The following table indicates the source and number of samples examined:—

TABLE CXIV

Source	Number of Samples
Department of Health	1,351
Irrigation and Water Supply Commission ..	2,093
Department of Local Government	525
Department of Mines	189
Department of Harbours and Marine ..	234
Miscellaneous Government Departments (State)	176
Miscellaneous Government Departments (Commonwealth)	38
Public	119
Total	4,725

As usual the greatest number of samples was received from the Irrigation and Water Supply Commission which continues to increase its search for waters suitable for irrigation, stockwatering and human consumption.

The availability of a Flame Photometer has enabled a survey to be commenced to ascertain the pattern of Sodium, Potassium and Lithium content of Queensland waters.

Samples submitted by the Health Department maintain a close control on the chemical quality of the reticulated water supplies throughout the State. Also with the rapidly increasing industrial development in Brisbane a constant check is being made on the river pollution position and samples are regularly received for examination to prevent any dangerous pollution trends.

Following the introduction of "The Fluoridation of Public Waters Act of 1963" several Town Councils have commenced fluoridation of their reticulated water supplies. Samples of these waters are submitted regularly for the checking of their fluoride content against the quantity permitted under the Regulations of the above Act.

An increasing number of samples of sewage is being received from the Department of Local Government. These are required for the purpose of ensuring the efficient functioning of sewage plants installed in country towns throughout Queensland. In many cases additional determinations are being requested.

In association with the search for Oil in Queensland, samples of water are being received from the Department of Mines Geological Survey Office. Apart from the value of these analyses to the Oil Search Companies, they further the knowledge of underground waters.

The Department of Harbours and Marine continues to submit samples taken from the Brisbane River at selected points and at various phases of the tide. These are required for their regular survey of the silting of the river.

SECTION 2

TOXICOLOGY AND BIOCHEMISTRY

J. C. YULE, B.Sc., A.R.A.C.I.—Officer in Charge

TOXICOLOGY

Of the 880 specimens examined, 783 were in connection with 236 post-mortem examinations. The majority of these were at the request of Coroners throughout Queensland.

Poisons and drugs in quantities which could have a significant bearing on the cause of death were found in specimens from 175 of these post-mortem examinations.

Barbiturates were again most commonly found (125 cases) and included pentobarbitone (65 cases), carbital (21), amytal (14), butobarbitone (7), barbitone (2), seconal (3), phenobarbitone (1), and in 12 cases mixtures of barbiturates were present. Other drugs and poisons found were ethyl alcohol (3 cases), chloral (6), arsenic (2), cyanide (5), strychnine (3), aspirin (3), quinine (1), parathion (2), neguvon (1), camoquin (1), carbon monoxide (2), glutethimide (1), ferrous sulphate (1), malathion (1), T.E.P.P. (1), nivaquin (1), mercury compounds (1), iodine (2) and in 13 cases mixtures of drugs, other than barbiturate were present. Alcohol was present with other drugs in 53 cases.

The remaining 61 examinations did not reveal any poison but were considered necessary to exclude this as a possible cause of death. In 17 of these cases, however, drugs in therapeutic quantities were found.

Other specimens included dog viscera and poison baits (11 specimens), drugs (44 specimens), food, clothing, wood, sand, a baby's feeding bottle, a bumper bar and a guide post.

Eleven specimens of breath were examined for the presence of volatile solvents including ether, chloroform and carbon tetrachloride.

Several specimens were received in connection with an arson attempt.

A specimen of "Gin Sling" was found to be heavily contaminated with zinc and copper compounds derived from a plated brass dispenser fitted to the bottle.

The Administration of the Territory of Papua and New Guinea submitted 19 specimens mainly in connection with post-mortem examinations.

Appearances in Court, to give evidence, were required on 41 occasions.

BIOCHEMISTRY

Biochemical specimens were examined from the Laboratory of Microbiology and Pathology, Government Medical Officers, Police Department, Director of Industrial Medicine, Hospitals and Medical Practitioners. The nature, significance and number of such specimens are shown in Table CXV.

TABLE CXV

Nature of Specimen and Significance	Number of Specimens
Blood and Urine for Alcohol (taken in connection with Traffic Charges)	384
Blood and Urine for Alcohol and or Drugs (chiefly Post-mortem specimens)	938
Stomach Washings for Drugs	20
Blood for Carbon Monoxide	35
Urine, Blood and Bone for Lead	858
Hair, Nails and Urine for Arsenic, Chromium, Thallium and Mercury	64
Miscellaneous	36
	2,335

The following table gives an analysis of the results obtained from the specimens of blood received in connection with Traffic Charges:—

TABLE CXVI

Blood Alcohol (per cent.)	Proportion of total specimens (per cent.)
Less than 0.11	2.0
0.11 to 0.14	4.5
0.15 to 0.18	19.5
0.19 to 0.22	27.5
0.23 to 0.26	24.5
0.27 to 0.30	15.5
0.31 to 0.34	4.5
More than 0.34	2.0
	100.0

A special Committee of the British Medical Association considers that a concentration of 0.05 per cent. of alcohol in blood while driving a motor vehicle is the highest that can be accepted as entirely consistent with the safety of other road users.

SECTION 3

Mining and Secondary Industries

D. MATHERS, M.Sc., A.R.A.C.I., K. H. DEASY, B.Sc. (Hons.), A.R.A.C.I.—Officers in Charge

Table CXVII shows the sources of work carried out by this section.

TABLE CXVII

Department	Number of Samples
Mines Department	18
Coal Board	694
Public	140
Miscellaneous Government (State)	221
Miscellaneous Government (Commonwealth)	37
Industrial Hygiene	108
Geological Survey—	
Coals	303
AuAg	261
AuAg +	119
Gas	97
Oil	31
Miscellaneous	1,237
Clay	41
Total	3,307

The bare figures hide the considerable amount of work which is necessary for the presentation of information in a form useful to the Departments which submit the samples to this Laboratory. Few of the samples would involve only one determination and some could require as many as twenty and are only fully examined by the co-operative efforts of several members of the section.

Most of the work submitted has been directly concerned with the economic development of the State and the total would have been much higher had not the persons sending samples realised that, with our inadequate staff, it was easier to get immediate though incomplete results, rather than seek the full answer which would necessitate a long period of waiting.

MINES DEPARTMENT

Coals submitted for examination come from the Geological Survey and the Queensland Coal Board, one concerned with the long-range exploration of reserves, the other with control of the quality of the product as marketed. Together, from work performed in this section, these bodies are able to build up a catalogue of the various types of coal which can interest potential buyers, both within the State and overseas. Work which had previously been done as a check on the quality of coal sent overseas ceased during the year as the export supplies had become fully stabilised.

Samples submitted as a result of Geochemical Survey continue to increase and are limited by two factors. One is the rate of sample preparation for analysis, the other is the realisation by the geologist that this laboratory cannot, at present, cope with any considerable increase in work of this nature. Techniques which are at present in use have been of considerable benefit in speeding up determinations, but even these are slow when compared with modern spectrographic and fluorescence methods in use in other laboratories similar to this. The introduction of Atomic Absorption in a short time will be of immediate assistance in this field.

Rocks, clays and economic minerals are submitted by the Geological Survey, some for complete analysis and some for single element determination. These include samples for copper, lead, zinc, manganese, lime, nickel, tin, gold and silver. Fifteen rocks were submitted for total analysis as part of a programme conducted by the Geological Survey. Many coal ashes have been similarly analysed in order to assess the behaviour of coal when burnt as fuel in boilers.

Apart from work associated directly with mineral deposits, this section has given assistance and valuable advice to various sections of the Mines Department in many other ways. Three diesel engines intended for use in underground haulage were tested at the manufacturers' plant, both to ensure that the exhaust fumes were satisfactorily treated to avoid building up concentrations of toxic gases below ground and also to determine that the exhaust temperature was not excessive.

The gas sub-section has handled fewer natural gas samples this year because of the decline in the rate of drilling in Queensland. This has been partly offset by an increase in the gas samples received from coal mines, particularly those taken from shotholes drilled into the coal face. Interest in these arises from the knowledge seam gas analysis provides of changes in the composition of the gases encountered as working of the coal proceeds, thereby enabling preventive measures to be taken before dangerous gas conditions actually occur.

During the year the chief chemist visited the Illawarra coalfield of New South Wales to study gas problems in this area, in particular the "bottom gas" found there. This is an inflammable mixture of carbon dioxide and methane which differs from the normal "firedamp" in that it makes for the floor, instead of the roof, when it first spills into a working place, and is consequently more easily missed in routine testing for inflammable gas. The ability to study at first hand the problems of others before they become our own must always be rewarding, and continuation of this policy can only lead to improvement in all aspects of industry.

Steps have been taken to provide a testing box and a cylinder of compressed methane to allow more extensive testing of gas analysis apparatus for the Mines Department and also the industrial hygiene work of the laboratory. Such testing is very necessary in order that officers of the laboratory can become thoroughly familiar with the accuracy and limitations of the instruments that they themselves must use and which they frequently recommend for use by others.

The section has been able to assist the Government Gas Engineer by undertaking analytical work for him in connection with the control of the quality of coal gas supplied to industrial and domestic users in Brisbane, and it is envisaged that our facilities will be much more frequently utilised by him in the future.

In association with the Director of Industrial Medicine, two officers visited a coal mine to assess the effects of Hydrogen Sulphide.

These and other types of investigation have been carried out with a great degree of co-operation between this section and the officers of the Mines Department. In this regard, opportunity has been given whereby this staff has been able to visit local coal mines to improve their knowledge of mine-layout, the better to assist in giving advice when required.

OTHER DEPARTMENTS

Assistance was given to the Local Government Department during the investigation into the causes of failure by corrosion of lock-gates installed in a tidal drainage scheme. Other Departments have also sought advice on problems associated with the prevention or remedy of wastage by corrosion.

Problems arising from the pollution of the Brisbane River have been submitted by the Department of Harbours and Marine. Some of these were raised in an attempt to lay blame on deliberate pollution by toxic effluents and often it is possible to do this. More interesting are those questions which arise because of the possibility of using the river to carry away unwanted though apparently harmless by-products of manufacturing processes. As the industrialisation of the State increases, more of these problems will arise.

Industrial Hygiene is again part of the work of this section. Visits have been made to determine concentrations of toxic fumes and vapours. Recommendations given as a result of studying the conditions in these places have led to improved and safer working conditions. Among questions dealt with, one concerned the use of oxy-torches to burn ships' plates which had been previously painted with Lead Oxide. In other instances tanneries, meat works and cold rooms were visited. An officer of this section attended a Symposium on the Determination of Traces of Compounds and established a closer understanding of the difficulties associated with this type of work.

SECTION 4

FEDERAL DEPARTMENTS, PUBLIC WORKS, QUEENSLAND HOUSING COMMISSION, STATE STORES, &c.

R. S. POTTER, A.R.A.C.I.—Officer in Charge

A detailed list of the samples examined by this section is set out below:

Customs and Excise	1,203
Primary Industry (Commonwealth)	2,951
Queensland Housing Commission	6,045
Public Works Department (State)	1,015
State Stores	696
Other Departments	113
	<hr/> 12,023 <hr/>

This number is slightly in excess of last year's figure (11,946), indicating that the heavy demands on the section have been maintained.

The Customs and Excise Department submitted fewer samples this year. This fall in numbers has been more than compensated by the extent and complexity of the examinations now being required on the individual samples.

The Commonwealth Department of Primary Industry again submitted an increased number of samples. The number of beef fat samples submitted for determination of chlorinated hydrocarbons rose by 70 per cent. This restricted the time available for the development of methods for the determination of organic phosphates in meat and dairy products, since only one officer can be spared for both of these duties. The Division of Industrial Medicine submitted 14 samples of blood, drawn from men handling chlorinated hydrocarbons. No cases of excessive pesticide absorption were detected in these men. The usual coverage of dairy products—butter, cheese, milk and milk products—and flour, jam, honey, canned fruits, &c., was maintained.

The volume of work carried out for the State Stores was maintained at last year's above average level. Towards the end of the previous year an officer of the section visited the southern states to investigate several aspects of textile testing. The value of this visit, both in the personal contacts made, and in the experience gained, was apparent in the past year. Experiments were undertaken to determine the effect of various laundry methods on the shrinkage of textiles. This work is continuing, and could lead to an alteration in the appropriate specifications. After protracted negotiations, a new specification was drawn up for Wool-Polyester Cloth for Police Uniforms. This included reduction of the composite strength from "not less than 585 pounds" to "not less than 500 pounds," and the weight from 7.5 ounces to 7.0 ounces. A standard length of cloth has been woven by a Queensland Mill, and is held at the Laboratory as a reference standard. The usual variety of articles for Governmental use, such as throw away pens, disinfectants, detergents, floor polishes, soaps, &c., were examined.

The Queensland Housing Commission and Public Works Department again submitted over 7,000 paint samples, with the high standards established during the last few years maintained. The Paint section moved into new, spacious quarters, and an increase in efficiency was apparent following this move.

The usual coverage of serge samples, pocketing and linings was carried out for the Railway Department. Some trouble was experienced with Railway Serge, where a persistent fall-off in tensile strength was noted. It has been stated that this can be attributed to a lower quality in the wool, following drought conditions in the State.

DIVISION OF GERIATRICS

Director of Geriatrics: P. G. LIVINGSTONE, M.B., B.S. (Qld.), M.R.C.P. (Ed.)
Medical Officer: M. CHEONG, M.B., B.S. (Qld.)

GERIATRIC UNIT—PRINCESS ALEXANDRA HOSPITAL

The past year has been one of consolidation. The number of inpatient beds has remained the same. There has been an increase in the number of physiotherapists working in the Unit and the attendances to the Outpatient Clinic and Day Hospital have increased.

Table CXX shows admissions to the Geriatric Unit for the past year. The total number remains similar to previous years. The number of patients referred from private medical practitioners has shown a slight increase. This trend has been evident for the past two years.

Table CXXI shows Discharges—Transfers—Deaths for the past year. Here, there has been a significant increase in the number of patients transferred to what is designated in the table as “other hospitals”. This refers primarily to chronic hospitals run by Church organisations. A similar proportion of patients have been discharged to private homes, as in previous years.

The Day Hospital

The Day Hospital in the Geriatric Unit has been in operation since May, 1963. To give some idea of its overall function, the following statistics are reported:—

In the past year 343 patients have received treatment. The age distribution of these patients was—

	Male	Female	Total
Under 60 years	50	57	108
60 to 70 years	55	44	98
70 to 80 years	38	51	90
80 to 90 years	15	30	44
90 to 100 years	2	1	3
Total	160	183	343

It is interesting to note that the largest proportion of patients treated in the Day Hospital are under the age of 60 years. This is in contrast to the age range of inpatients where the largest number is in the 70-80 years age group. The reasons for this high percentage of under 60 years patients treated were that the younger patients were easier to transport and many of them suffered from long term chronic disabilities which required intensive outpatient treatment. Quite a proportion of the older patients who received inpatient treatment had suffered fractured femurs and other orthopaedic conditions, and many of these did not require to attend the Day Hospital following discharge.

Most of the patients attending had recently been discharged from the geriatric wards, but a significant number were referred by their private doctors or from outpatient clinics of various hospitals. This does indicate that many more medical practitioners are becoming aware of the facilities available in the Geriatric Unit and the types of patients who might benefit from treatment.

Most of the patients discharged from the Day Hospital returned to their own private medical practitioners, but a number were referred to the Geriatric Outpatient Clinic or other hospital outpatient clinics.

Of the treatment given, 84 per cent. of the patients received physiotherapy; 27 per cent. received occupational therapy; and 8 per cent. speech therapy. Most of the patients consulted the attending medical officer for a significant medical condition, at least twice during each month. It is important to note that a medical clinic is held in the Day Hospital each day. The average daily attendance was 39 with a fairly even proportion of male and female patients. This is of considerable interest because the proportion of male and female inpatients is 2 female to 1 male, yet there were equal numbers attending the Day Hospital. Most of the patients attended between once and twice a week and the average length of attendance was 8½ months.

Of the conditions that the patients suffered from, various forms of hemiplegia were high on the list. A significant number of patients with amputations, old fractures, arthritis, and various forms of chronic neurological conditions received treatment. These figures give some indication of the tremendous work that is undertaken in the Day Hospital.

The staff consists of one full-time and one half-time physiotherapist, one occupational therapist, one part-time speech therapist, a full-time sister and an assistant nurse, together with a number of voluntary helpers and assistance from various patients. A medical officer is in attendance each day and a social worker is available for consultation.

Most of the patients are considerably improved by their attendance and many of them are able to live a much more independent existence after treatment. One difficulty associated with discharge is that many of the patients are still incapacitated and require some social outings. Their attendance at the Day Hospital has provided this. The development of day centres, with particular reference to the one in Berwick Street, The Valley, has helped considerably in overcoming the social isolation from which many of these past patients suffer.

Speech Therapy Clinic

The Speech Therapy Clinic has treated 126 patients during the year with an average number of 40 patients treated per week, comprising 17 inpatients and 23 outpatients. Most of the cases treated have speech defects due to cerebrovascular disturbances, e.g. aphasia, dysarthria, dysphonia. Speech therapy also assists in the rehabilitation of younger head injury cases with similar speech defects. Other speech disorders treated include dysphonia, stammering, and articulation defects. Some patients receive speech therapy from the time they are admitted to the acute section of the hospital, while they are in the Geriatric Unit, and afterwards while attending as outpatients.

Equipment used in the clinic includes a tape recorder and audiometer. The audiometer is proving very valuable in the treatment of patients with different types of hearing loss, as well as in the assessment and testing of the deaf. The Speech Therapy Clinic is now co-operating with the Ear, Nose and Throat Department and has set aside one afternoon per week for carrying out hearing tests on patients referred from that Department.

General

The Geriatric Unit has had a number of donations. Two alternating pressure mattresses and a washing machine were donated by the Ionian Club. Audiometry equipment for the Speech Therapy Clinic was donated by Squibb and Sons, and many items have been provided by the Princess Alexandra Hospital Women’s Auxiliary. The Women’s Auxiliary has also sponsored a number of concerts and a Christmas party in the Day Hospital. To these organisations go sincere thanks for their help and donations.

Medical students attend the Unit in fourth year as part of the social and preventive medicine course, in fifth year to see certain aspects of rehabilitation, and finally in small groups during sixth year to attend rounds and be instructed in various aspects of geriatric medicine. Physiotherapy, speech therapy, social work and occupational therapy students attend the Unit throughout the year. Members of the Blue Nursing Service from the Brisbane and Gold Coast Centres attend regularly.

In September, 1965, the Gerontological Society of Queensland had its inaugural meeting. This Society has its headquarters at the Geriatric Unit. During the year it has held three scientific meetings which have stimulated considerable thought and discussion on some of the problems of ageing. The Society has a membership of seventy-two. The monthly clinical meetings have been held in the Geriatric Unit and a wide range of topics has been discussed.

EVENTIDE, SANDGATE

The Director visits “Eventide” each month to advise on many aspects of patients’ care. The every-day medical attention is provided by the Visiting Medical Officer, Dr. A. Tonkin, and by the Medical Officer, Division of Geriatrics. Medical clinics are held at the Home each day at which 10 outpatients and 30 inpatients are seen by each medical officer. The Visiting Medical Officer is on call 24 hours a day for urgent cases. The re-organisation of trained staff duties to allow the sisters direct responsibility for individual wards and patients has worked very well. There has been excellent co-operation between the sisters and the nursing staff.

The Physiotherapy Department is well equipped and many patients have benefited from attendance. The new application forms for admission to the Home have been in use for the past twelve months and have enabled a more accurate assessment of patients to be made before admission.

A large number of applicants for admission to "Eventide" Home have been referred to the Director for a medical report, and in some cases a social report. These patients have been seen and assessed. This has helped in the placement of the patients in the Home, to prepare the patients and their families for admission, and to indicate the respective urgency of admission.

SOCIAL WORK

There has been a steady increase in the number of referrals to the social worker, 131 cases having been handled of which 108 were new referrals and 23 were carried forward or re-opened from the previous year. At 30th June, 1966, 113 cases had been closed, 10 having been referred to other social workers. 18 were carried forward to the current year.

The sources of referral of new cases are set out in Table CXIX.

TABLE CXIX

SHOWING SOURCES OF REFERRALS TO THE
SOCIAL WORKERS

The Director of Geriatrics and Geriatric Unit	14
Within the Health Department	15
Other State Government Departments	5
Other Social Agencies and Departments	21
Domiciliary Services	12
Hospitals (other than Social Work Departments)	4
"Eventide"	3
General Practitioners	5
Client or associate direct to social worker	29

Of the cases handled, 101 were predominantly concerned with some aspect of care of the aged, the presenting problems in order of priority being: Physical illness or disability, accommodation (including Aged Person's Homes, convalescent homes, chronic hospitals or other accommodation), mental illness subnormality, financial circumstances, general family welfare, alcoholism, community or neighbourhood involvement or occupational interests, employment or migrant difficulties. In almost every instance there were present at least two and usually more interrelated difficulties.

Seventy cases necessitated long term or fairly intensive casework with the elderly person, with relatives or with associates. Short term cases were usually related to the immediate and often urgent necessity of arranging residential care, either for the isolated aged or as an emergency measure to relieve a family crisis. Close co-operation with the recently appointed public health sister has been of great mutual benefit, particularly following the initial home assessment of patients discharged from the Geriatric Unit. Social investigations have been carried out where applications have been made to the Department for medical aids.

An important aspect of the work has been concerned with those applications for "Eventide" admission where the aged person's health and general living conditions indicated an urgent need for admission and special reports were necessitated. It has been found that there is in the community a quite significant number of isolated elderly persons, very often in urgent need of help for medical or social reasons, sometimes depressed or psychiatrically disturbed and living in conditions of neglect and even squalor. Usually they are brought to the notice of the social worker by a neighbour, landlord, tradesman, health inspector, local police or domiciliary nurses. Aged people, whether living alone or with relatives can by the provision of adequate domiciliary services be enabled to stay at home and in familiar surroundings; hospital readmissions are prevented, and institutional placements are lessened. Even a severely incapacitated or bedridden aged person can be maintained in the community with visits from a home nursing service and Meals on Wheels and assistance from Home Help with domestic duties. A family will more readily assume the responsibility of care if assured of some relief of the burden particularly with relation to bathing and nursing procedures, and there has been at all times a close liaison between the social worker and the various domiciliary services.

There has been further development of the consultative and co-ordinating function of the social worker and it is hoped that this area will continue to expand and be seen as an integral part of the service offered by the Geriatric Division. A disappointing feature has been the fact that no use at all has been made of this advisory service by general practitioners, and the actual number of cases, 5, has been only slightly higher than last year. This may be due to a lack of awareness of the services available rather than a disinclination to use them—yet where an elderly person is without relatives or close friends, the general practitioner may be the most important outside contact. Where families are concerned, he is often in a position from a long association to note potential areas of breakdown, or early signs of stress or tension resulting from the presence of an aged relative.

One group seeking help from the Geriatric Services, but not actually within its scope comprised those just under pensionable age applying for admission to "Eventide", but not eligible, and middle aged or younger invalid pensioners suffering from such disabilities as epilepsy or blindness. Facilities for this group are limited, particularly when the applicant is unemployable or an alcoholic and most Aged Person's Homes and convalescent homes cater for an older age group. Even when accepted in a Home the placement is often not successful because of this age discrepancy.

Where services to the aged in the community are concerned, the position cannot be said to be satisfactory when isolated elderly persons who could have been helped at an early stage, deteriorate in mental or physical health or live in unsuitable conditions because their situation is unknown to the community, nor where any person must accept institutional care unwillingly because domiciliary services are inadequate or unavailable in his area.

PUBLIC HEALTH NURSE

The Public Health Nurse commenced duty on 17th January, 1966. For the first month she received instructions on aspects of public health nursing as it applies to the geriatric patient. This instruction was given in the Division of Geriatrics and in the Geriatric Unit, Princess Alexandra Hospital. The Public Health Nurse's duty has been to follow up all patients discharged from the Geriatric Unit who return to their own homes or to the homes of their families. She sees the patients before discharge and discusses with them details concerning her subsequent visit, and if possible also interviews the patients' relatives. She discusses with the ward sister and other members of the staff of the Geriatric Unit who treated the patient details concerning the patient's health, care and welfare.

The nurse visits the patient in his home within the first fortnight of discharge; she observes the general structure and layout of the home; advises on alterations to improve the safety and general mobility of the patient; and assesses whether the patient is in fact doing all the daily activities within the limits of his disability. She advises the family on general care of a disabled person in the home. A plan of the home is prepared and advice on adjustments given. Sources and prices for any specialized equipment needed is supplied. The home physiotherapy programme is discussed and advice on the performance and number of repetitions together with instruction in the use of equipment is given.

The nurse reports to a weekly conference which consists of the Director, the Social Worker and the Public Health Nurse. Various aspects of the patient's care are discussed, and final recommendations are made. This may involve contact with domiciliary services, the patient's general practitioner or further discussion with the staff at the Geriatric Unit. A report of the nurse's visit is sent to the patient's private medical practitioner. His approval for her visit in the first place was obtained before the patient was discharged from hospital.

Since 9th February, 1966, the Public Health Nurse has visited 125 patients and has carried out 40 follow-up visits.

MEDICAL CONFERENCES

The Director has attended a number of interstate conferences. In December 1965 he was a delegate to the annual meeting of the National Old People's Welfare Council in Melbourne. In March he presented a paper on "The Role of the Visiting Nurse in the Follow-up and After Care of the Geriatric Patient Discharged from Hospital," to the Preventive Medicine in General Practice sub-committee of the National Health and Medical Research Council in Canberra. Following this meeting the Director was invited to be a consultant to a committee set up to look into the place of the public health nurse in health services. In April he attended the annual meeting and Congress of the Australian Association of Gerontology in Canberra.

PROSTHESES AND INVALID EQUIPMENT

The number of patients supplied with artificial aids has continued to rise during the year. All such patients are assessed from the medical, social and financial aspects. Equipment is lent only when the need is demonstrated and when the financial state of the patient is such that they are unable to provide it themselves. These articles are lent on a basis of permanent loan and are therefore only supplied to patients who will require the aid for an extended period.

A close check is made at regular intervals on all such items and when they are no longer required, they are returned to the Geriatric Unit, Princess Alexandra Hospital, inspected and any necessary repairs carried out. These articles are then available for reallocation. The supply of these aids and equipment has allowed many disabled patients to remain in their homes or with their families.

TABLE CXX

ADMISSIONS TO THE GERIATRIC UNIT AND WHERE FROM DURING THE YEAR 1965-66

Sex			Total	Princess Alexandra Hospital (Acute Section)	Princess Alexandra Hospital (Chronic Section)	Royal Brisbane Hospital	Private Homes	Other Hospitals	Convalescent Homes	Country Hospitals
Males	..	..	311	163	4	56	73	6	3	6
Females	..	..	494	284	2	98	94	7	3	6
Totals	..	..	805	447	6	154	167	13	6	12

TABLE CXXI

DISCHARGES, TRANSFERS, DEATHS FROM THE GERIATRIC UNIT DURING THE YEAR 1965-66

Sex			Total	Private Homes	Princess Alexandra Hospital (Acute Section)	Princess Alexandra Hospital (Chronic Section)	Eventide Sandgate	Royal Brisbane Hospital	Other Hospitals	Died	Convalescent Home
Males	..	..	315	152	11	53	8	4	5	51	31
Females	..	..	490	229	25	51	9	6	56	58	56
Totals	..	..	805	381	36	104	17	10	61	109	87

DIVISION OF NURSING

Adviser in Nursing: E. W. S. SULLIVAN, S.R.N., S.C.M., M. & C.W.C.

CORRESPONDENCE AND INTERVIEWS

There has been an increased number of enquiries from trained nurses from overseas countries concerning positions in this State. This is a welcome trend which should assist in overcoming the shortage of trained staff common to other States and other countries.

Many enquiries were also received from nurses concerning positions in hospitals and in the Public Service; from student nurses wishing to resume training after having left their original training school; and from country hospitals seeking assistance in nursing problems.

NURSES BOARD OF QUEENSLAND

The Nurses Board of Queensland constituted under "*The Nurses Act of 1964*" held its first meeting in July. This Board replaces the Nurses and Masseurs Registration Board of Queensland, and consists of two medical practitioners, one officer from the Education Department, and six registered nurses.

MATRONS' CONFERENCE

Sixty matrons from city and country hospitals and institutions attended the Matrons' Conference which was officially opened on 9th May by the Minister for Health, the Honourable S. D. Tooth.

In addition to formal lectures, problems common to most Matrons were discussed and, at the close of the conference, the Honourable the Minister received a deputation from the Matrons to enable them to present the resolutions adopted during the week.

INTERSTATE CONFERENCES

Western Australia which is holding a Technical Education Year was the host State of a conference to discuss nurses registration board affairs. The Adviser in Nursing and the Principal Tutor from the Princess Alexandra Hospital, who

are members of the Nurses Board, attended as Queensland representatives. Discussions covered many aspects including the desirability or otherwise of conducting a course in basic nursing education within a university or a technical college.

VISITS TO COUNTRY HOSPITALS

Hospitals at Bundaberg, Cairns, Cunnamulla, Childers, Chinchilla, Dalby, Goondiwindi, Inglewood, Jubilee, Jandowae, Esk, Hughenden, Gladstone, Gin Gin, Ipswich, Injune, Laidley, Maleny, Miles, Mitchell, Mt. Isa, Nambour, Roma, Southport, Stanthorpe, Surat, Taroom, Texas, Townsville, Toowoomba, Tully, Warwick were visited during the year. Many of these are nurse training schools and sufficient numbers of young girls are coming forward to undertake nurse training. Problems of nursing administration were discussed with the Matrons during these visits.

COLLEGE OF NURSING, AUSTRALIA, QUEENSLAND BRANCH

The Queensland Branch of the College of Nursing which is totally supported by the Queensland Government, conducted courses in Nursing Education, and Hospital Nursing and Ward Management during 1965, and this year a course in Nursing Education is being held. It is regretted that the proposed course in Hospital Nursing and Ward Management for which the Department of Health had offered six scholarships, had to be abandoned because of lack of applicants.

The Staff Tutor from the College accompanied the Adviser in Nursing on visits to some of the hospitals to obtain first-hand information regarding problems associated with nursing administration.

WASTAGE OF STUDENT NURSES

The survey into the wastage of student nurses was continued and details contained in Table CXXII indicate the degree of wastage has remained much the same as last year.

TABLE CXXII

WASTAGE OF STUDENT NURSES—QUEENSLAND

Hospital	Daily Average	Student Enrolment					Total Year 1965	Wastage of Students				Per-centage of Total	Age Groups					Educational Standard				Reasons Given for Leaving						Others **			
		1st	2nd	3rd	4th	5th		1st	2nd	3rd	4th		Total	17 and under	18	19	20	21 +	Not known	8th and under	Sub. Jnr.	Jnr.	Above Jnr.	Not known	Not suited	Fail Exams	Per-sonal		Health	Dom-estic	Mar-riage
Atherton	61-99	12	17	7	12	..	48	1	2	3	2	8	16.7	1	2	3	2	.. 3	.. 5	.. 3	8	.. 2	..	1	1	2	..	.. 1	4	.. 6	
Ayr	58-02	18	13	9	7	.. 3	47	11	8	..	1	20	42.6	9	3	4	1	.. 1	.. 4	..	10	..	1	1	10	..	..	.. 1	1	.. 2	
Barcaldine	10-71	8	1	1	..	..	13	5	2	..	..	7	53.8	2	..	1	..	.. 1	.. 4	..	7	..	2	2	1	..	..	..	..	.. 1	
Beaudesert	40-6	13	6	2	2	..	23	3	1	..	..	7	30.4	1	..	1	..	.. 1	.. 4	..	2	..	1	1	2	..	..	..	..	.. 1	
Biloela	16-3	6	4	4	2	..	16	5	1	1	..	7	43.8	2	..	3	2	.. 2	.. 6	..	1	..	..	..	4	..	..	..	..	.. 1	
Blackall	16-44	5	3	2	..	..	11	..	1	1	..	3	18.2	..	..	..	..	.. 1	.. 1	..	3	..	..	..	..	..	..	..	..	.. 1	
Bowen	18-44	8	5	4	1	..	18	..	1	1	..	3	16.7	..	..	..	..	.. 1	.. 4	..	104	..	..	..	..	..	..	..	..	.. 1	
Brisbane Women's	1,013-07	487	162	116	100	..	856	60	44	19	5	128	15.0	30	53	23	12	10	4	8	10	2	21	8	7	.. 9	.. 2	.. 2	13	68	
Brisbane	219-79	255	..	..	..	..	255	38	..	..	..	38	14.9	..	..	..	..	38	4	5	20	..	5	..	1	1	..	.. 5	7	19	
Bundaberg	131-54	26	26	23	25	..	100	4	11	..	..	20	20.0	2	..	5	5	3	2	3	12	1	3	1	1	2	..	..	..	7	
Cairns	174-0	58	39	14	12	..	123	16	13	..	..	29	23.6	8	14	2	2	3	1	6	17	2	9	4	4	..	.. 1	..	..	4	
Charleville	47-1	12	10	6	2	..	30	2	5	1	..	8	26.7	3	..	3	1	2	2	2	5	..	1	1	..	..	..	..	..	1	
Charters Towers	23-87	9	6	1	11	..	27	4	2	..	..	7	25.9	..	..	..	..	..	2	2	3	..	2	..	..	..	..	..	..	..
Childers	12-4	1	3	..	1	..	5	1	..	..	..	1	20.0	..	..	..	..	.. 1	.. 1	..	..	..	..	..	..	..	..	..	..	..
Chinchilla	28-38	13	7	2	6	..	28	2	5	..	..	7	25.0	..	..	1	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..
Clermont	18-74	8	4	3	1	..	16	3	2	..	..	5	31.3	..	..	3	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..
Collinsville	14-49	8	3	2	7	..	16	1	3	..	..	5	31.3	..	..	2	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..
Dalby	42-6	9	11	8	3	..	35	3	5	..	..	8	22.9	..	..	5	..	..	.. 2	..	..	..	..	..	..	..	..	..	..	..	..
Gladstone	39-99	11	10	4	5	..	30	3	3	1	..	7	23.3	..	..	1	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..
Goondiwindi	28-7	6	12	3	3	..	22	2	4	..	..	7	31.8	..	..	1	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..
Greenslopes	580-0	22	26	13	3	..	64	1	2	..	..	3	4.8	..	..	2	..	..	.. 2	..	..	..	..	..	..	..	..	..	..	..	..
Gympie	98-49	14	26	13	25	..	78	2	2	..	..	11	14.1	..	..	1	..	..	.. 2	..	..	..	..	..	..	..	..	..	..	..	..
Ingham	43-29	11	7	5	5	..	28	7	4	..	..	11	39.3	15	2	6	..	..	.. 3	..	..	..	..	..	..	..	..	..	..	..	..
Innisfail	94-42	41	16	8	14	..	79	17	6	..	..	27	34.2	5	9	5	2	5	10	4	10	2	6	2	2	..	..	..	..	..	..
Ipswich	160-3	34	40	23	42	..	139	7	15	1	..	23	16.5	5	9	1	3	5	4	2	15	..	2	2	8	..	..	..	..	..	..
Kilcoy	19-3	4	2	2	1	..	9	1	..	1	..	5	22.2	..	..	1	..	..	.. 4	..	..	..	..	..	..	..	..	..	..	..	..
Kingaroy	64-56	14	8	6	7	..	35	1	2	..	..	2	14.3	..	..	1	..	..	.. 7	..	..	..	..	..	..	..	..	..	..	..	..
Longreach	25-43	12	5	1	4	..	22	9	..	..	..	9	40.9	2	5	1	1	..	.. 2	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	139-16	19	17	12	19	..	67	16	6	..	..	29	43.3	6	7	4	5	7	4	6	16	..	2	2	7	..	..	..	..	..	..
Mareeba	58-58	11	14	7	5	..	37	2	9	..	..	11	29.7	4	5	2	..	..	.. 7	..	..	..	..	..	3	..	..	..	..	..	..
Maryborough	167-95	41	25	30	12	..	108	13	8	3	1	25	23.1	8	9	4	3	1	..	3	15	..	5	1	5	..	..	..	..	..	..
Miles	19-53	9	2	1	3	..	15	1	..	1	..	2	13.3	..	..	1	..	..	.. 7	..	..	..	..	..	..	..	..	..	..	..	..
Mitchell	21-12	7	4	..	2	..	13	2	1	..	..	3	23.1	2	2	..	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..
Monto	13-6	4	4	1	2	..	11	2	2	..	..	4	36.4	1	1	1	..	..	.. 2	..	..	..	..	..	..	..	..	..	..	..	..
Mossman	27-89	5	4	2	6	..	11	2	1	..	..	3	17.6	1	..	1	..	..	.. 7	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	65-13	33	9	7	3	..	52	18	1	..	..	19	36.5	11	4	1	1	2	..	5	7	..	6	1	12	..	..	..	..	..	..
Mount Morgan	26-45	14	4	3	4	..	26	6	1	..	..	8	30.8	6	2	..	..	..	.. 3	1	..	..	..	..	..	..	..	..	..	..	..
Nambour	46-9	15	11	8	12	..	46	3	3	3	..	9	19.6	2	3	3	..	.. 1	..	..	8	1	..	1	..	..	..	..	..	..	..
Princess Alexandra	1,079-96	236	246	132	196	..	810	59	27	13	4	103	12.7	18	35	19	13	18	..	..	62	40	10	2	29	15	6	12	29	29	
Proserpine	22-0	11	8	..	4	..	23	1	3	1	..	5	21.7	1	3	..	1	..	.. 4	..	..	..	2	2	..	..	..	..	..	..	..
Rockhampton	232-0	36	42	23	32	..	133	19	3	2	6	30	22.6	9	7	5	7	2	..	4	20	..	4	1	5	..	..	..	..	..	..
Roma	38-95	10	8	7	7	..	32	5	5	5	..	15	46.9	4	2	2	1	..	1	..	7	..	..	1	4	..	..	..	..	..	..
Southport	60-1	16	9	12	14	..	51	8	3	2	..	13	25.5	1	7	3	1	..	2	..	10	1	..	1	4	..	..	..	..	..	..
Stanthorpe	33-32	10	11	6	4	..	31	2	2	..	..	4	12.9	2	2	..	..	..	..	..	3	..	..	1	1	..	..	..	..	..	..
Toowoomba	206-36	48	39	30	44	..	161	7	9	4	1	21	13.0	3	6	5	5	2	..	5	15	6	2	3	2	..	..	..	..	..	..
Townsville	336-44	64	43	43	74																										

** Dissected as follows:—

Left without notice .. 35
Left the district .. 24
Homesick .. 21
Another position .. 15
Retired or Dismissed .. 33
Misdeemeanour .. 5
Unsettled, unhappy .. 14

No reason given .. 5
Disinterested .. 21
Can't study .. 8
Train elsewhere .. 47
Asked to discontinue .. 8
Transfer to Assistant-in-Nursing .. 6

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DIVISION OF SOCIAL WORK

Adviser in Social Welfare: M. K. WHILEY, B.A., Dip.Soc.Stud. (Melb.)

Social Worker—Geriatrics: E. P. DOBBYN, Dip.Soc.Stud. (Q'ld.)

Social Workers: H. TAN, B.A., B.Soc.Stud. (Q'ld.) from Feb.-May, 1966

M. B. PULEA, Dip.Soc.Stud. (Q'ld.) from May, 1966

The work of the social work section has been greatly facilitated since the Division was moved in December 1965 to its new location in the Health and Welfare Building. Attractive confidential interviewing rooms are now available for families who seek assistance with personal and social problems. Facilities for student training and team case-conferences are now more adequate and enable more appropriate integration of social work with other sections concerned with preventive and public health programmes.

SERVICES REVIEWED

This year the function of the Division and particularly the responsibilities of the Adviser in Social Welfare have been reviewed in relation to developments in other aspects of the State Government social welfare services.

During the past six years, although impeded by the difficulties of obtaining sufficient suitable professional staff, many developments have taken place in the welfare services offered through Government departments. The most noticeable advances have been achieved in the welfare of Aborigines and Torres Strait Islanders (where new legislation has been introduced) in child welfare, and also in the expansion of social work services to meet the social needs of those who come into contact with the various health, medical and hospital services. The Adviser in Social Welfare has been associated with these developments either directly or through membership of advisory committees.

As these services expand, it becomes increasingly important that Government departments, hospitals and institutions responsible for welfare services should avoid overlapping and wastage. To facilitate co-ordinated development of this work, the former position of Senior Social Worker was officially designated Adviser in Social Welfare.

It is envisaged that the Division will continue to function along similar lines to the past but with increasing responsibilities in the areas of social research and consultation. In the past the Adviser in Social Welfare was available for consultation as a member of the committees concerned with child welfare and the welfare of Aborigines and Torres Strait Islanders and although these committees have completed their official tasks will continue to be available for discussion as co-ordinated developments become necessary. For example, the social and health problems of part-Aboriginal families dwelling in fringe settlements will require close co-operation between health and welfare services concerned with all aspects of family life.

SOCIAL WORK AND PUBLIC HEALTH

In addition to the advisory and co-ordinating responsibilities the Division administers a social casework service for families and individuals in need, as an integral part of the Department's preventive health services. Old age, disability and poor health may lead to social maladjustment or even severe hardship if social functioning or mobility has been affected.

When the social casework service was first offered by a social worker in the Department, it met an urgent need for assistance to families-in-need while other social work services were developing in this community. The Division also assisted in studying gaps in the existing provisions for the social well-being of families in difficulties. Working in close co-operation with other services, the Department's casework service has assisted in initiating some important new areas of the work. For example, guidance and assistance is now available for families whose social problems are thought to be adversely affecting their school age children's health.

While the overall administration of welfare services has been under review, the validity of the casework approach has also been clearly demonstrated in some areas where a comprehensive social casework service had not previously existed. However, since its inception this service to the community has been severely limited by the difficulties of obtaining staff.

SOCIAL CASEWORK SERVICES

Because of the acute staff shortage this year, casework intake has again been limited. However, many people have been assisted and the following analysis will be of interest:—

Altogether 230 cases received a wide variety of service from social workers in the Health and Medical Services. Of these 173 were new-client cases.

In previous years each social worker has worked with a wide range of social problems, including problems related to the care of the aged. However, since the appointment of a social worker to work with geriatric patients, the work with the aged is developing as a specialised field and the number of requests concerned with the care of the aged is increasing correspondingly.

A. CARE OF THE AGED

There were 92 new-client requests for assistance for aged persons in the financial year just ended, compared with 42 new-client cases in the previous year, 35 in 1963 and 13 in 1962. Of clients previously known to the Department, 27 received further service, making a total number of 119 people who received some form of assistance this year from the social worker specialising in services for the aged.

This number represents a noticeable increase in the requests which come to the Department through domiciliary nursing services and other voluntary social agencies. Few of the problems are uncomplicated. Most indicate a multiplicity of causes—usually related medical and social problems. In almost all cases aged persons referred to this section for social assistance were also suffering some form of physical illness or disability, and a small percentage were in some way mentally disordered.

There were 75 requests for assistance in finding more suitable accommodation. Financial difficulties were the concern of 22 cases and, of these, 20 were referred to appropriate agencies for assistance as the Department does not administer a relief fund.

Reviewing the requests for assistance, the social worker has drawn attention to the shortage of accommodation for middle-aged Invalid Pensioners unable to manage in their own homes and ineligible for admission to Homes for the Aged subsidised under the terms of the Aged Persons Homes Acts of 1954-57. There were also many requests for Home Help services not able to be met by existing provisions.

In addition to the casework service, the social worker is compiling information on provisions for the aged in this community so that this may be made available to relatives, medical practitioners, or others seeking to assist individual old people with a specific problem. This service will continue in the coming year but it is not yet possible to extend it outside Brisbane.

B. FAMILY WELFARE

As well as the service for the aged, the Department offers a family casework service to a limited number of families in need, particularly in cases where the health of young children is endangered as a result of family social problems.

The following is an analysis of these requests:—

Total number of cases	121
Number brought forward or re-opened from a previous year	40
Number of new-client cases	81

Source of Referral of New Cases

(a) Health Department (including 33 cases from School Health Services)	48
(b) Other State Government Departments	5
(c) Hospitals	3
(d) Social Agencies	11
(e) Medical Practitioners	6
(f) Client or their Associate direct to social worker	8
Total new cases	81

Reason for Referral to Social Worker (Presenting Problem)

(a) Illness or Disability (including 5 Psychiatric)	21
(b) Care of Aged	1
(c) Family Welfare (including marital problems)	20
(d) Child Health or Welfare	53
(e) Unmarried Mother	12
(f) Accommodation	13
(g) Employment	4
(h) Financial Circumstances	11
(i) Cot Deaths	5
(j) School Adjustment and Attendance	12
(k) Other	6

NOTE.—In some cases there were more than one presenting problem for which assistance was requested.

CHILD HEALTH

Again this year a large number of the requests for intensive family casework services concerned the health and social adjustment of school age children. With the limited social work staff available it has not been feasible to accept all cases brought to the notice of the social workers through the School Medical Officers, but where a social worker has been able to secure family co-operation or to assist with family problems there is every indication that some more serious problems have been prevented.

So far this service has been limited to the families of primary school children in the metropolitan area. Although many of the families also include other children or children in the pre-school age groups, it is not yet possible to offer such a service for secondary school children or for families known to pre-school centres and clinics. Nor can any social work in this field be extended yet to centres outside Brisbane.

These needs will be kept in mind as soon as the staff of the Social Work Division can be increased. The possibility of offering at least a consultant service on community resources to assist School Health sisters in country districts will be considered.

PREVENTIVE HEALTH AND WELFARE

A number of this year's requests which could not receive adequate attention were requests for assistance to families living in poor conditions outside the metropolitan area. Some of these represent families who have moved from country districts for employment reasons, but have been unable to adjust satisfactorily to city or suburban conditions. Usually these families do not qualify for Housing Commission rental homes, for various reasons, so that their standard of accommodation is poor, access to children's medical services is difficult, and children's attendance at school is often irregular. Some, but not all, would be families of Aboriginal descent.

Work with these families is time consuming and often requires considerable skill, but this work is important in terms of the contribution it can make toward safeguarding children's health and preventing later mental health problems. Because of the possibility of close co-operation on a regional basis with health inspectors, school nurses, and other preventive health services, the social workers in the Health and Medical Section are in a strategic position to assist these families.

It is noted that no social workers are employed yet by any Local Authority in Queensland. The possibility of regionally based social work services will be further investigated if suitable staff is available.

"COT DEATHS"

A social worker has continued to visit distressed families following the sudden unexpected death of an infant. In all cases the cause of death was not known at the time of the visit but was later found to be due to an infection. Of 8 "cot deaths" this year there were 5 cases in which a visit to the parents was considered necessary to offer emotional support and explain procedure regarding tests, and issuing of certificates. Although this number is small, the service is important particularly in those cases where parents may be needlessly worried about the possibility of contributory neglect on their own part. The other three families were not visited because there was some indication that they had access to information and could be assisted in some other way. It has been the social worker's impression in visiting this year that there is a greater community understanding of this problem and that parents, although distressed by their loss, are less likely to fear investigations or feel that death might have been due to suffocation.

TUBERCULOSIS SERVICES

Again this year neither the Chermside Chest Hospital nor the Chest Clinic, Brisbane, has been able to secure the services of an experienced social worker. The Adviser in Social Welfare is available for consultation but many families whose stability is likely to be threatened by the social problems linked with a parent's illness require guidance and assistance.

A further attempt will be made this year to meet this need.

PSYCHIATRIC SOCIAL WORK

Again this year the shortage of psychiatric social workers has been acute, and it has not been possible to maintain even the nucleus services already established. It is estimated that at least ten vacancies for social workers in this field must be filled if this service to patients, which should be an integral part of psychiatric treatment, is to be consolidated effectively. At Lawson House, Royal Brisbane Hospital, two social workers working as part of the psychiatric team assist in the understanding of those social stresses which might have contributed to the patient's illness, and where possible endeavour to help the patient overcome these problems as he readjusts to

community living. However, at Chermside Neuro-psychiatric Unit, Brisbane Special Hospital and the Psychiatric Clinic in Mary Street, Brisbane, only part-time social work services are available and there is no social work service available for parents of severely mentally handicapped children, even though vacancies for these positions have been widely advertised.

One encouraging development in the psychiatric field this year was the appointment of an experienced social worker to work at the Toowoomba Special Hospital.

SOCIAL WORK AND ALCOHOLISM

Another appointment of special interest has been the appointment of a social worker to assist part-time in the rehabilitation of patients receiving treatment at the Alcoholism Rehabilitation Centre, Wacol. While this social worker is available only 2 days a week, it appears economical for him to limit his work to the Wacol Centre only and his work is being planned to assist patients in small groups. However, as soon as this service can be extended, it is hoped that assistance to patients and their families will be available in a wide range of social problems linked with alcoholism, and that the service will also be extended to patients at Pavilion 4, Alcoholism Treatment Unit, Royal Brisbane Hospital. Every effort will be made in the coming year to develop this service further.

CHILD GUIDANCE

The Division of Welfare and Guidance Clinics has increased its social work staff this year to meet the increasing demands linked with setting up the new Institute of Child Guidance. In addition to the work with parents of disturbed children, the social workers in this Division are able to make a valuable contribution to the practical training of social work students.

SOCIAL WORK IN HOSPITALS

The social work department which was re-opened last year in the Princess Alexandra Hospital was able to extend its services in January this year when two additional social workers, both University of Queensland graduates, were appointed to the hospital staff. Medical social work assistance is now available to hospital patients with a wide range of problems, and of particular interest is the social worker's contribution in the rehabilitation of newly blind adults.

The social work department at the Royal Brisbane Hospital has continued to offer an effective service for hospital patients and for patients of the Women's Hospital where much of the social worker's time is devoted to assisting in the rehabilitation of unmarried mothers.

The work at the Children's Hospital is still limited and requires the services of a fairly experienced medical social worker.

The social worker at Townsville Hospital continues to carry a very heavy caseload. Since Cairns and Toowoomba Hospitals were forced to close their social work departments during the year when staff was not available, Townsville is the only hospital employing a full-time social worker outside the Brisbane area. The development of regionally based social work services appears likely to be an acute problem for some time.

RECRUITING AND SOCIAL WORK TRAINING

In reviewing the year's developments the most pressing problems would appear to be the acute shortage of social work staff in the psychiatric field and the almost complete lack of social work services in the health field and hospitals outside the Brisbane metropolitan area. While the difficulties of recruiting suitable staff for these services persists, the Adviser in Social Welfare is co-operating with the Education Department and the Vocational Guidance Service in "Careers" recruiting programmes. Department facilities in all appropriate sections are made available to the University for use in the practical training of social work students.

The number of students seeking admission to the social work training in the University of Queensland is increasing each year. Unfortunately the number of male recruits entering professional training is still disappointing, and will need to be increased to meet the needs in some areas more appropriate for male social workers, and to stabilise some senior positions.

SCHOLARSHIPS

This year six new scholarships in Social Studies were awarded by the Department bringing the total number of students who have been awarded State Government Scholarships for social work training to 17.

The first of these students graduated in January 1965 and is employed as a social worker in the geriatric field. Two other students graduated in January 1966 and took up appointments in the Psychiatric Services and the Welfare and Guidance Clinics. Three scholarship holders graduate at the end of 1966. Six scholarships will be awarded again this year.

FLYING SURGEON SERVICE

Flying Surgeon: D. B. LEAMING, M.S. (Durham), F.R.C.S. (Eng.), F.R.A.C.S.
Anaesthetist: A. G. SMITH, M.B., B.S. (Q'ld).
Pilots: Captain JOHN BARTRUM
Captain IAN CAMPBELL

The Flying Surgeon Service makes routine and emergency visits to Barcaldine, Blackall, Clermont, Cloncurry, Collinsville, Emerald, Hughenden, Julia Creek, Mount Isa, Muttaborra, Quilpie, Richmond, Roma, Surat, Winton, Springsure and Aramac. The visits to Springsure and Aramac were commenced during the year. The Flying Surgeon is also visiting specialist in General Surgery and Urology to Mount Isa Hospital.

Since its inception the Service has now flown 663,845 miles, has seen 9,937 patients, performed 2,735 routine operations and 637 emergency operations. The amount of work performed by the Service in the last three years is shown in the following Table.

TABLE CXXIII

Year	Miles Flown	Total Patients	Operations	
			Routine	Emergency
1964	93,963	1,140	362	83
1965	114,580	2,368	636	129
1966 (to June) ..	53,315	1,021	294	61

During the year, Dr. Rod McLeod from Brisbane, was the surgeon's locum tenens in January and Dr. Rowland Gale replaced the surgeon when he took study leave in June. Dr. Smith, the anaesthetist, was relieved by Dr. Lance Wilkes during a month's recreation leave.

The Service lost a good friend and an outstanding pilot, when Captain John Bartrum left Longreach to take up a position in Brisbane. His replacement, Captain Ian Campbell, has a vast experience on light twin-engined aircraft, and so he is a very welcome member of the team.

The Service continues to provide specialist surgical advice and treatment to the people of Western Queensland. The operations performed extended from the most minor procedure to important radical operations. Most surgical specialities are represented in the work done, with Orthopaedics, General Surgery and Gynaecology heading the list.

LEGISLATION

Section 30 (1) of "*The Health Acts, 1937 to 1964*" was amended by declaring the notifiable disease Taeniasis to be notifiable to the Local Authority.

"The Radioactive Substances Regulations, 1961" were amended as follows:—

Regulation 18 was amended to exempt from the necessity to hold a license to have in possession a radioactive substance, a patient of a medical practitioner or dentist who is in possession of a radioactive substance merely by reason of the fact that he is undergoing or has undergone treatment with the substance.

Regulation 69 was amended to require that, during transport, any package containing a radioactive substance be placed at such a distance from the driver's and any other occupied seat that the effective dose received by any person shall not exceed 2.5 millirem in any one hour. The regulation before amendment prescribed "in one hour".

Schedule VI to the Regulations was amended by addition of a new prescribed form—Form 14—Notice of Seizure of Radioactive Substance/Irradiating Apparatus.

"The Barbers Shops Regulations of 1952" were amended to extend Regulation 4A of Part 1A by including the Cities of Gold Coast and Ipswich in the list of areas empowered to license barbers shops. This amended Regulation was published in the Government Gazette of 28th August, 1965.

"The Cafe Regulations of 1955" were amended by publication in the Government Gazette of 12th March, 1966, by deletion of the last paragraph of Regulation 22(h) and substitution therefor of a new paragraph declaring a revised list of Local Authorities in whose areas this Regulation (providing for the licensing of cafes) is in force. The amended list includes 14 Cities, 4 Towns and 71 Shires.

"The Poisons Regulations of 1958" were amended by deletion of adrenalin and sympathomimetic amines from Schedule 3 (Poisons) and placing them in Schedule 4 (Restricted Drugs). This amendment was published in the Government Gazette of 29th January, 1966.

An Order in Council under section 154M, Part IVc—Scientific Research and Studies—of "*The Health Acts, 1937 to 1964*", published in the Government Gazette of 9th October, 1965, authorised the undermentioned persons to conduct the research project "Stability and Safety of Tractors for Agricultural Purposes" under the said Part IVc—

Mansergh Shaw, M.Eng., M.Mech.Eng., M.I. Mech.E., M.I.E.(Aust), Professor of Mechanical Engineering, University of Queensland.

Barry Anthony Smithurst, M.B., B.S. (Syd.), M.R.A.C.P., M.P.H. (Harvard), Senior Lecturer in Social and Preventive Medicine, University of Queensland.

Frank William Grigg, B.E., M.Eng.Sc., Senior Research Officer, Department of Mechanical Engineering, University of Queensland.

Geoffrey Lloyd McDonald, B.E., Demonstrator, Department of Mechanical Engineering, University of Queensland.

A Proclamation published in the Government Gazette of 6th November, 1965, fixed the eighth day of November, 1965, as the date on which section 76E of "*The Health Acts, 1937 to 1964*" should come into force.

This section provides that a convalescent home shall not be erected or kept otherwise than under and in accordance with a license.

ACKNOWLEDGMENTS

I have much pleasure in recording my gratitude to all members of the staff for their loyal service, support, and conscientious attention to duty.

Acknowledgment is also made to the Agent-General for Queensland and his officers for the assistance given me whenever it was asked for, and to other Government Departments for their co-operation, particularly the Government Statistician, Mr. S. E. Solomon, the Assistant Supervisor, Demography and Social Section, Bureau of Census and Statistics, Mr. A. Johnston and Mr. V. H. McLean, Senior Compiler, who, as usual, have been of great assistance in preparing the vital statistics section of this report and have supplied other statistical details from time to time throughout the year.

Every assistance has been given by the President (Dr. Robert Miller) and members of Council of the Australian Medical Association, Queensland Branch, and I am indebted to them for the help they have given me. I also acknowledge the co-operation I have received from my colleagues in the profession.

I would also thank the members of the various expert committees who have given so freely of their time and advice.

I desire to acknowledge the co-operation I have received from the Medical Superintendents of the base hospitals and would particularly thank Dr. A. D. D. Pye, General Superintendent of the Royal Brisbane Hospital, and Dr. O. W. Powell, Medical Superintendent of the Princess Alexandra Hospital for the assistance they have given during the year.

ANNUAL REPORT OF THE NATIONAL MOSQUITO CONTROL COMMITTEE, 1965-1966

The Committee's work this year showed a great increase in educational and advisory services; the programme of research into the systematics, biology and distribution of Queensland mosquitoes has also continued.

1. COURSES IN MOSQUITO TRAPPING AND IDENTIFICATION

At the request of the Health Inspectors' Association of Australia (Queensland Branch), the Department of Entomology, University of Queensland, arranged for three two-week courses. The Committee's Senior Research Officer, Dr. E. N. Marks, was made available to plan and conduct these courses. In this she was assisted by several specialist lecturers, and a demonstrator provided by the Department. The courses included both laboratory and field work. A total of 40 students attended, comprising 36 health inspectors (35 from Local Authorities and one unattached), 2 Army Hygiene personnel, and 2 graduate entomologists (one from University of Queensland, one from School of Public Health and Tropical Medicine, University of Sydney). Local Authorities represented were Albert Shire Council, Beaudesert Shire Council, Bowen Shire Council, Brisbane City Council (9), Burnett Joint Health Board, Cairns City Council (2), Cloncurry Shire Council, Emerald Shire Council, Glengallan Shire Council, Gold Coast City Council (3), Ipswich City Council, Isis Shire Council, Johnstone Shire Council, Laidley Shire Council, Mackay City Council, Mulgrave Shire Council, Paroo Shire Council, Pine Rivers Shire Council, Redlands Shire Council, Rockhampton City Council, Toowoomba City Council, Townsville City Council (2), Warwick City Council.

Two courses, 17-28 January and 1-11 February were run in the Department of Entomology, St. Lucia, and one, 16-27 May, in the Department of Zoology, University College of Townsville, with enrolments of 14, 16, and 10 respectively. Lectures and demonstrations on Insecticide Resistance by Dr. G. H. S. Hooper, Department of Entomology and on Trapping Mosquitoes by Mr. H. A. Standfast, Queensland Institute of Medical Research, were included in Brisbane courses; on Filth-inhabiting Flies by Mr. J. H. Ardley, School of Public Health and Tropical Medicine, Sydney, in the Townsville course; and on Ecology of Biting Midges by Dr. E. J. Reye, Department of Entomology, in both courses.

An illustrated manual "An Atlas of common Queensland mosquitoes by E. N. Marks with a guide to common Queensland biting midges by E. J. Reye" was specially prepared for these courses. This deals with identification of females and larvae of 23 species of mosquitoes which are common in at least portion of Queensland and which have several times been submitted by health inspectors for identification; also with identification of adults of 7 species of biting midges. The Atlas should enable its users not only to identify the mosquito species dealt with, but also to recognise when they have less common species which should be submitted for identification.

Appreciation of the value of these courses has been expressed by the Health Inspectors' Association and by those who attended them.

2. AEDES AEGYPTI SURVEY

Aedes aegypti is the vector of Haemorrhagic Fever in S.E. Asia and in 1965 W.H.O. requested Commonwealth and State Directors of Health to supply all available information on the distribution, density and seasonal prevalence of *A. aegypti*, particularly in cities and towns, and also to arrange for insecticide susceptibility surveys.

The co-operation of Health Inspectors throughout the State has been sought. The susceptibility survey is being undertaken by Dr. G. H. S. Hooper, Department of Entomology, University of Queensland, and the distribution survey by the Committee. The following records of *A. aegypti* are derived from specimens submitted for both projects, and cover the period July 1965-June 1966. It is important to note however that these record the distribution of collectors of *A. aegypti*, and do not necessarily indicate the extent of present distribution of the mosquito itself.

Millmerran, October, November; Pittsworth, October; Gympie, November; Gin Gin, March, April; Springsure, March; Rockhampton, March; Sarina, October; Mackay, July; Proserpine, September; Cannon Valley, September; Charters Towers, October, March; Townsville, November, May; Magnetic Island, August; Georgetown, September, June; Flying Fish Point, Innisfail, October, November, April; Almaden, September; Chillagoe, September; Yungaburra, September; Mareeba, September.

The Chief Health Inspector, Toowoomba, reported in October no indication that *A. aegypti* was breeding in the area and the Health Inspector, Laidley Shire, reported similarly in February. There has been no indication of its breeding in Brisbane during the year. The City Inspector, Gympie, stated

in November that its incidence was light and its pest status of little consequence. The Chief Health Inspector, Townsville, reported in November that *A. aegypti* was not prevalent outside Magnetic Island. The District Health Inspector, Cairns, reported in October that at Thursday Island he had been unable to collect *A. aegypti*, and that Europeans and natives alike had made an onslaught with kerosene on unprotected water in tanks and drums.

The great majority of larval samples of *A. aegypti* in the above collections were from rainwater storage tanks of 100 gallons or more, several were from 44-gallon drums used for water storage, a few from motor tyres and one from an old fish-tank. Most of the State had an exceptionally low rainfall during this period and there would have been few suitable small container habitats, such as old tins, available as breeding places. All the collections submitted were from localities less than 200 miles from the east coast. This could have been influenced by the severity of the drought in western areas, but it remains uncertain whether absence of records indicates absence of *A. aegypti* or absence of collectors.

It seems clear that *A. aegypti* depends almost entirely on domestic water tanks and drums for survival in adverse seasons. In cities and larger towns which have a reticulated supply of good quality water, domestic tanks have largely disappeared. This is probably the principal reason for *A. aegypti*'s disappearance from Brisbane and for the great reduction in its incidence in Townsville. It is now in smaller centres which are dependent on rainwater for domestic use that *A. aegypti* occurs most frequently. Of the 19 localities listed, 13 have a population under 3,000, 11 under 2,000, 9 under 1,000 and 5 under 300.

A. aegypti's reduced pest status is probably also due in part to the introduction of the domestic motor-mower. Formerly, during the summer wet seasons in Queensland, there were in the vicinity of dwellings, many areas with a heavy growth of long grass which it was beyond the capacity of householders and local authorities to control. In these places tins and other water holding containers could lie hidden and add greatly to the number of breeding places available to *A. aegypti*. Most such sites nowadays are kept with short grass and free of rubbish throughout the summer.

A. aegypti is a domestic species which frequently rests indoors and another factor in reducing its incidence has undoubtedly been the extensive use in recent years of residual insecticides for household sprays.

Several native species of mosquitoes may breed in sites suitable for *A. aegypti*. It seems possible that, in some of these sites at least, *A. aegypti* cannot compete successfully with them, and its incidence may be thereby reduced. *Aedes notoscriptus* is the commonest and most widespread of these species, while in some places, notably at Townsville, *Aedes tremulus* is also common in domestic sites. They are more likely to be competitors in garden breeding places, such as ornamental shells, tins, tree holes, and papaw stumps, than in domestic tanks (though both species will breed in these as well) and this would increase the importance of tanks to survival of *A. aegypti*. (This suggestion is based on knowledge of the habits of these species, and not on any experimental evidence.)

There has been a feeling in some quarters that *A. aegypti* was no longer present in south-east Queensland where winter conditions are not so favourable for it as in the tropics. The records from Millmerran and Pittsworth on the Darling Downs and from Gympie, are therefore of particular interest and importance, and the collaboration of Mr. J. C. O. Moore, Health Inspector, Pittsworth Shire Council in submitting 8 series of samples from his district was particularly appreciated.

Thanks are expressed to those inspectors who have collaborated in this survey and provided the collections on which this report is based.

3. MOSQUITO SURVEY IN THE CITY OF WARWICK

At the request of the Warwick City Council, Dr. E. N. Marks visited Warwick 19-21 October to examine and advise on the possible sources of the main mosquito infestations in the City, which were reported to commence usually in late October or early November. Breeding places of domestic mosquitoes are well known to health inspectors, and the survey's main object was therefore to discover which of the non-domestic potential breeding sites in representative parts of the city were producing mosquitoes and what species were involved.

Twelve species are recorded from Warwick, two of which *Anopheles amictus amictus* and *Aedes lineatopennis* were not found in this survey; these two and *Aedes mallochii* are unlikely ever to be a nuisance.

The two species associated with domestic sites, *Aedes notoscriptus* and *Culex fatigans* are likely to be present throughout the year.

Three species which breed only in temporary pools left by heavy rain or floods, *Aedes alternans*, *Aedes vittiger* and *Aedes theobaldi*, may occur in pest numbers 1-2 weeks after breeding places are filled but do not persist for long. *Aedes alboannulatus* can breed in both temporary and semi-permanent ground pools, and in large containers such as troughs. This species is often a rural pest in southern states; it appears quite common in the Warwick area and is likely to be a minor pest at times, particularly in spring and autumn.

Anopheles annulipes here was found breeding principally along the Condamine river in weed patches both along and away from the bank. Where there are many cattle or other livestock in the vicinity it is unlikely to be troublesome to man, but a light trap collection from Barnes Park indicated that it might be more of a nuisance at Glennie Heights than in other areas trapped.

Culex annulirostris, found only in small numbers during the survey, is likely to occur in large numbers after low-lying areas have been flooded.

A Problem for Health Authorities

Culex australicus was the species collected in greatest numbers during the Warwick survey, both in larval collections and in light traps. This species very rarely bites man and feeds mainly on small mammals and birds. However, it presents a considerable problem to health authorities because of its close resemblance to *C. fatigans*. Males and larvae of the two species can usually be distinguished under a microscope, but it is often impossible to identify females with certainty. Large numbers of adults were taken in a light trap close to sewerage filter beds and pastures irrigated with sewerage effluent, and intense breeding occurred in pools formed by run-off from pastures irrigated with piggery effluent; other sites associated with animal industry effluents had been treated with insecticide and were not examined.

C. australicus was also present in larval samples from a grassy drain at the Pittsworth Cheese Factory collected by Pittsworth Shire Health Inspector.

It will be exceedingly difficult for health inspectors to distinguish when effluents are breeding *C. fatigans* which requires control, and when they are breeding *C. australicus*, control of which is not urgent.

4. PUBLIC HEALTH

Collections of mosquitoes and midges (including those submitted in response to the request for samples of *Aedes aegypti*; and those received through the Department of Health and Medical Services) were identified for—

Brisbane City Council
Burnett Joint Health Board (2 lots)
Cloncurry Shire Council
Eacham Shire Council
Emerald Shire Council
Gympie City Council
Ipswich City Council (2 lots)
Johnstone Shire Council
Laidley Shire Council (2 lots)
Maroochy Shire Council
Maryborough City Council (2 lots)
Mulgrave Shire Council (5 lots)
Pittsworth Shire Council (8 lots)
Proserpine Shire Council
Rockhampton City Council
Roma Town Council
Sarina Shire Council
Townsville City Council (2 lots)
Warwick City Council
Winton Shire Council
District Health Inspector, Townsville
District Health Inspector, Cairns
Hookworm Control Inspector, Cairns
Officer Commanding, R.A.A.F. Base, Darwin

Information on larvivorous fish was provided to—

Department of Health and Medical Services
Banana Shire Council
Jondaryan Shire Council
Paroo Shire Council

Information on mosquito problems in particular areas was provided to—

Department of Health and Medical Services (a report on collections made in Mulgrave Shire in the past two years)
Murweh Shire Council
Council of Progress Associations, Caboolture Shire

5. MOSQUITOES IN THE CUNNAMULLA DISTRICT

An invaluable opportunity to obtain information on the mosquitoes of far western Queensland and their seasonal prevalence is being provided by the collaboration of Mr. J. Wright, Lands Dept., Rabbit Control Officer for the Cunnamulla area, who is interested in their potential role in spreading myxomatosis. His collections submitted for identi-

fication, totalling 550 specimens of adult mosquitoes, were made largely in the field 45-115 miles South, West or North from Cunnamulla. (Specimens collected in the town itself are treated below under a separate heading.) An unexpected finding is that two of the commonest *Aedes* occurring after rain are species previously known from comparatively few specimens and as yet undescribed, *Aedes* "sp. No. 71" and *Aedes* "sp. No. 85".

Until September, adult mosquitoes had not been seen for several months and the rainfall for the preceding 12 months was approximately 2 inches. Rain not only provides or extends breeding places of mosquitoes but also promotes humid conditions suited to increased activity of adult mosquitoes already present.

Species which breed in temporary pools

Several *Aedes* species are believed to have drought-resistant eggs which are deposited in the mud of drying-out depressions and hatch soon after these are filled by rain or floods. In summer larvae develop quickly and adults may emerge less than a week after the depression was filled.

Aedes "sp. No. 71" was taken on 22 September after thunderstorms yielding up to 3 in. rain had fallen some miles away two weeks previously; it was taken again on 14 December, after further rain. *Aedes* "sp. No. 85" was collected on 20 December, 6 days after rain, and again on 13 January. *Aedes theobaldi eidsvoldensis* was taken on 5 and 11 January, the latter 5 days after 1 in. rain fell. On 18 and 19 January (after 2 in. rain on 7 January) in dusk and early evening biting collections, these three species were taken in considerable numbers, *A. "sp. No. 85"* being most numerous, followed by *A. t. eidsvoldensis*, but the latter was commonest in a daytime collection on 21 January. On 29 March, 10 days after light rain, *A. t. eidsvoldensis* and *A. "sp. No. 85"* were again collected but mosquitoes were very scarce. On 5 May 90 pts rain fell. On 31 May numerous *A. "sp. No. 71"* and a few *A. "sp. No. 85"* were taken inside a caravan; on 2 June *A. "sp. No. 71"* was biting in large numbers in mid-afternoon; on 8 June at dusk its numbers were less, and small numbers of *A. "sp. No. 85"* and *Aedes bancroftianus* were collected. A few *A. "sp. No. 71"* were taken during the day on 14 June but there were still large numbers biting in late afternoon on 15 June. By June there were frosts at night.

It appears from these records that in the far south-west of Queensland *A. "sp. No. 71"* and *A. "sp. No. 85"* replace their respective close relatives, *Aedes theobaldi* and *Aedes vittiger*, which are the common pest *Aedes* after rain in the vicinity of Tara and Roma; also that both species will breed after suitable rains in either summer or winter. More evidence is needed to show whether *A. t. eidsvoldensis* breeds only in summer; the male and larva of this species are unknown and its relationship to *A. theobaldi* sensu stricto needs elucidation. *A. bancroftianus* has not previously been recorded from this district but is known from other low rainfall areas.

Species which breed in permanent and semi-permanent ground water

Anopheles annulipes and *Anopheles amictus amictus* were both taken on numerous occasions. *An. annulipes* was reared from larvae collected from a bore-drain in September, taken in a caravan near an earth tank in October; and adults were numerous biting until 10 p.m. on 31 October. Both species were biting at dusk and until 9 p.m. in January, 11 days after a 2-in. fall of rain; both were collected inside a caravan in May, and taken biting at dusk near a bore drain on 8 June, when *An. annulipes* was much the commoner.

Culex annulirostris were numerous biting at dusk in mid-December when an increase in mosquito activity had been noted after a recent ½-in. fall, and were taken in lesser numbers in January 11-12 days after 2 in. rain. One specimen was collected from a warren in January.

Culex australicus is not a man-biting species, but will feed on rabbits. It was collected in a caravan in October, a female was taken from a rabbit burrow in December, and a male from one in January.

Species which breed in treeholes

Aedes tremulus was taken biting in the early morning or at night in October, December and January, and *Aedes notoscriptus* in October and December, *Aedes wattensis*, a small species, rare in collections and a new record for the district, was taken biting in the afternoon in September, and October and at night in December; numbers biting were reported to have increased in December; breeding places are unknown but are likely to be long narrow pipes in tree branches.

Adults of tree-hole species seldom occur in large numbers and their absence from later collections may not be a true indication of their seasonal distribution.

Mosquitoes in the town of Cunnamulla

On 2 November, in conditions of drought and heat, *An. annulipes* and *C. annulirostris* were taken resting indoors in the early morning, and on 23 December *C. annulirostris* was collected in the house at night.

On 14, 15 and 16 March when there had been no rain for 5 weeks, in a house 100 yards from the Warrego River, which had then fallen after a period of half flood, mosquitoes collected biting at dusk and from the walls of the house comprised 149 female and 28 male *C. annulirostris*, 2 female *C. australicus*, and 1 female each of *An. annulipes* and *An. amictus amictus*. At this time few mosquitoes were noticed away from the town. It seems highly probable that *C. annulirostris* was breeding in the river and its side pools.

On 3 and 21 May mosquitoes taken in the afternoon resting under the house and in a shed comprised large numbers of *Culex fatigans*; both sexes were present in about equal numbers suggesting that the breeding place was not far distant. One male of *Culex starckeeae* taken on 3 May is likely to have bred in the river.

Sandflies

These require muddy flowing water (i.e. flooded streams) in which to breed. Adults, probably all *Austrosimulium pestilens*, were collected biting on 23 December and 19 January.

6. MOSQUITOES IN A BRISBANE SUBURB

Mr. J. T. Brooks has submitted regular adult collections from Taringa during the year.

Mosquito activity commenced in August when *Aedes notoscriptus* and *Culex orbostiensis* were collected. *A. notoscriptus*, a tree-hole and container breeder which will breed in domestic sites, continued to be present in small numbers throughout the year. *C. orbostiensis* is a sylvan species occasionally penetrating into built-up areas. The Salt-march mosquito *Aedes vigilax* first appeared in September; there was an invasion on 22 September and another on 24 October, and it was numerous also on 21 November, 16-17 February, and 3 March; specimens were collected up till the end of May but on the whole this species was not as great a pest as usual this summer. *Aedes vittiger* was taken in mid-September and early April, and *Aedes procax* in late May; both breed in rain-filled pools. *Culex fatigans* was collected from October to May, the largest numbers being in January and February. *Culex annulirostris* was taken from September on and was commonest in February and March. *Culex sitiens* appeared in collections from February to April and *Culex australicus* from September to February.

7. FIELD WORK

Areas in which collections were made included Stapylton, Warwick, Cape Hillsborough, Bowen, Townsville, Mount Spec, Bunya Mountains and Moura.

At Stapylton, in October, *Culex australicus* was breeding in enormous numbers in a slightly brackish lagoon.

Opportunity was taken en route to Townsville in May to see the mosquito breeding areas round Bowen under the guidance of the Bowen Shire Health Inspector. Conditions were very dry. An interesting find here (and also at Magnetic Island) was *Aedes vigilax* breeding in brackish spring-fed rock pools on granite headlands.

At Townsville collections were made in conjunction with the Mosquito Identification Course. Conditions here were very dry also. *Culex annulirostris* was breeding in great numbers in a sedge swamp heavily populated with water birds. *Aedes tremulus* larvae were very numerous in a papaw stump in a suburban garden; this species may be a domestic pest in such conditions. Fourteen species were taken in a light trap close to a swamp in the suburb of Gulliver. Townsville City Council provided an inspection flight over the City Area.

At Mount Spec, collection of *Anopheles colledgei* is an indication that the mosquito fauna of the wet tropics extends further south along the ranges, than it does near the coast where many species are not found south of Cardwell or Ingham.

8. PUBLICATIONS

MARKS, E. N., 1966. An atlas of common Queensland mosquitoes; with a guide to common Queensland biting midges by E. J. Reye. 91 pp. Brisb. mimeo.

MARKS, E. N. and CRIBB, I. B., 1966. Notes on scrub ticks (*Ixodes holocyclus*) on native fauna in the Samford district. *Qd Nat.* 18: 16-18.

9. IDENTIFICATIONS

Valuable records and specimens were obtained from specimens submitted for identification.

QUEENSLAND. Cairns (J. T. Brooks), Carnarvon Gorge (J. D. Mabbett), Eungella Dam (R. Gipps), Herberton (W. Johnstone), Ipswich (B. Trevelthan), Iron Range (G. Monteith), Moggill (R. Bemrick), Mount Bauple (G. Monteith), Mount Poverty via Cooktown (M. Gliddon), Taringa (A. May), Yabba Creek (P. Kerridge).

NORTHERN TERRITORY. R. Story.

NEW GUINEA. S. H. Christian.

The most interesting of these were a male and female of an undescribed *Culex* from Carnarvon Gorge; this species was only known hitherto from the early stages and one damaged male.

10. MISCELLANEOUS

Specimens from the mosquito collection were loaned to U.S. National Museum. Mr. S. Sirivanakarn, Bishop Museum, Honolulu, spent several days in Brisbane working on the collections.

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